Infinity

# Interlude Series

# IL60 L/R

# Powered Loudspeaker

# Service Manual

Infinity Systems, Inc

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Woodbury, New York 11797

REV 5 5/2005

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# Specifications

| | |
|---|---|
| **IL60 L/R Frequency Response:** | 28Hz - 22,000Hz (±3dB) |
| **Recommended Amplifier Power Range** | 15-175 watts* |
| **Subwoofer Amplifier Output:** | 500 watts (In to 8Ω from 20 Hz - 100Hz with no more than 0.1% THD) |
| **Sensitivity:** | 89dB (2.83V @ 1 meter) |
| **Nominal Impedance:** | 8Ω |
| **Crossover Frequencies:** | 150Hz; 500Hz,2800Hz, 24dB/octave |
| **Low-Frequency Driver:** | 12" C.M.M.D., magnetically shielded |
| **Mid-Bass Driver:** | 6-1/2” C.M.M.D., magnetically shielded |
| **Midrange Driver:** | 4” C.M.M.D., magnetically shielded |
| **High-Frequency Driver:** | 1” C.M.M.D., magnetically shielded |
| **Dimensions (H x W x D):** | 48" x 9-1/4" x 17-1/4" (1219mm x 235mm x 438mm) |
| **Weight:** | 75 lb (34kg) |

* The maximum recommended amplifier power rating will ensure proper system headroom to allow for occasional peaks. We do not recommend sustained operation at these maximum power levels.

# Detailed Specifications

IL60 subwoofer 500W Powered Sub/ Plate Amp

| LINE VOLTAGE | Yes/No | Hi/Lo Line | Nom. | Unit | Notes |
|---|---|---|---|---|---|
| US 120vac/60Hz | Yes | 108-132 | 120 | Vrms | Normal Operation |
| EU 230vac/50-60Hz | Yes | 207-264 | 230 | Vrms | Normal operation, MOMS required |

| Parameter | Specification | Unit | QA Test Limits | Conditions | Notes |
|---|---|---|---|---|---|
| Amp Section | | | | | |
| Type (Class AB, D, other) | AB | --- | | HC-BASH Power Supply | |
| Load Impedance (speaker) | 4 | Ohms | | Nominal | Resistor Load |
| Rated Output Power | 500 | Watts | 450 | @30Hz, THD 15%, Limiter defeated | |
| THD@ 470W | 0.5 | % | 5 | 22k filter, 50Hz, LPF "On" | |
| THD @ 1 Watt | 0.05 | % | 0.3 | 22k filter, 50Hz, LPF "On" | |
| Polarity (Input vs Output) | 0 | deg. | 0° ±20 | @40Hz; LPF "On" | .250 faston (+).....205 faston (-) |
| DC Offset | 1 | mV-DC | 1.5 | @ Speaker Outputs | |
| Damping factor | > 50 | DF | | | |
| | | | | | |
| Input Sensitivity | | | | | |
| Input Frequency | 50 | Hz | | Nominal Freq. | 1 input driven |
| Line Input | 45 | dBr | ±2 | STO 1 Watt, @30Hz | LPF "On", BOS "Off" |
| Speaker/Hi Level Input | 21 | dBr | ±2 | STO 1 Watt, @30Hz | LPF "On", BOS "Off" |
| | | | | | |
| Signal to Noise | | | | | |
| SNR-A-Weighted | 110 | dBA | 100 | relative to 400W output | A-Weighting filter |
| SNR-unweighted | 100 | dBr | 85 | relative to 400W output | 22k filter |
| SNR rel. 1W-unweighted | 70 | dBr | 60 | relative to 1W output | 22k filter |
| Residual Noise Floor | 2 | mVrms | 3 | Volume @max, using RMS reading DMM/VOM (or A/P) | |
| Residual Noise Floor | 1 | mVrms(max) | 3 | Volume @max, w/ A/P Swept Bandpass Measurement (Line freq.+ harmonics) | |
| | | | | | |
| Input Impedance | | | | | |
| Line Input | 10k | ohms | | Nominal | |
| Speaker/Hi Level Input | 1k | ohms | | Nominal | |
| | | | | | |
| Active Filters | | | | | |
| Low Pass (fixed or variable) | fixed | -- | | | |
| Frequency | 100 | Hz | | | |
| Slope | 24 | dB/Octave | | | |
| Q | 0.741 | Damping | | | |
| Subsonic filter (HPF) | fixed | -- | | | |
| Frequency | 30 | Hz | | | |
| Slope | 12 | dB/Octave | | | |
| Q | 0.9 | Damping | | | |
| Line Out Filter (HPF) | no | -- | | Output to satellites | |
| Frequency | -- | Hz | | switchable | |
| Slope | -- | dB/Octave | | | |
| Q | -- | Damping | | | |
| Friend Circuit | no | -- | | | |
| Frequency | -- | Hz | | notch filter | |
| Slope | -- | dB | | | |
| Q | -- | Damping | | | |
| Parametric EQ (BOS) | | | | | |
| Frequency Pot | yes | -- | | 21 detent pot (0.1 oct. steps) | |
| Range | 20-80 | Hz | functional | | |
| Level Pot | yes | -- | -- | 21 detent pot (0.5dB steps) | |
| Range | 0 to -14 | dB | functional | | |
| Width (Q) Pot | yes | -- | -- | 21 detent pot (5steps/0.1 octave) | |
| Range | 0.05-0.5 | octave | functional | | |
| | | | | | |
| Features | | | | | |
| Main Power On/Off Switch | rocker | -- | funtional | Locate at amp plate | |
| Line/Spkr Input Select Switch | toggle | -- | funtional | Locate at amp plate | |
| BOS Bypass Switch | toggle | -- | funtional | Locate at amp plate | |
| Low Pass Filter Switch | toggle | -- | funtional | Locate at amp plate | |
| | | | | | |
| Limiter (yes/no) | yes | | | | |
| Output power limited to | 470 | Watts | 430 | THD <5% | |
| | | | | | |
| Output Volume Control | | | | | |
| Volume Control Pot | 10k | ohm | | Locate at front | |
| Detent (center/#) | no | -- | | | |

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# Detailed Specifications (Cont.)

| Parameter | Specification | Unit | QA Test Limits | Conditions | Notes |
|---|---|---|---|---|---|
| Taper (lin/log) | A- / C-taper | -- | | D-shaft pot for knob fitting; A-taper for "right" and C-taper for "left" | |
| @minimum setting | no output | dB | | | |
| | | | | | |
| Input/Output Configuration | | | | | |
| Line In (L,C,R,AC3,Mono) | Mono | -- | | RCA phono jack, gold plated | |
| Spkr/Hi Level In (L,C,R,mono) | Mono | -- | | Binding posts | |
| Line Outputs (L,C,R) | Mono | -- | | RCA phono jack, gold plated | High pass filtered, 2nd order |
| | | | | | |
| Signal Sensing (ATO) | | | | | |
| Auto-Turn-On (yes/no) | yes | -- | | Under the condition that bias power never exceed 15W | |
| ATO Input Frequency | 30 | Hz | | | |
| ATO Level | 8/100 | mV | 15/120 | @30Hz into single Line/Speaker Input | LPF "On", BOS "Off" |
| ATO Bandwidth | 300 | Hz | 350 | ATO-LPF for noise immunity | LPF "On", BOS "Off" |
| ATO Turn-on time | 5 | ms | 10 | Amp connected and AC on, then input signal applied | |
| Auto Mute/ Turn-OFF Time | 15 | minutes | 20 | Time before muting, after signal is removed | |
| | | | | | |
| Power on Features | | | | | |
| Power on Delay time | 2 | sec. | 3 | AC Power Applied | |
| Power on LED | yes | -- | | Bi-color LED located at front | |
| Normal On | green | color | | | |
| ATO | red | color | | "Active": green; "Standby": red | |
| | | | | | |
| Transients/Pops | | | | | |
| ATO Transient | 10 | mV-peak | N/P | @ Speaker Outputs | |
| Turn-on Transient | 100 | mV-peak | 1V-pp | @ Speaker Outputs | AC Line cycled from OFF to ON |
| Turn-off Transient | 100 | mV-peak | 1V-pp | @ Speaker Outputs | AC Line cycled from ON to OFF |
| | | | | | |
| Efficiency | | | | | |
| Stand-by Input Power | 14 | Watts | 15 | @ nom. line voltage | |
| AC Power Cons.@1W | 25 | Watts | 28 | @ nom. line voltage | |
| Power Cons.@470W | 820 | Watts | 940 | @ nom. line voltage | |
| Efficiency | 57 | % | 50 | | |
| | | | | | |
| Protection | | | | | |
| Short Circuit Protection | | -- | functional | Direct short at output | Compliance to HCG Reliability Test Plan |
| Thermal Protection | | -- | functional | @1/8 max unclipped Power | Compliance to HCG Reliability Test Plan |
| DC Offset Protection | | -- | functional | DC present at Speaker Out leads | Compliance to HCG Reliability Test Plan |
| ESD Protection | | -- | functional | ESD 15kV test apply to all input terminals | Compliance to HCG Reliability Test Plan |
| Line Fuse Rating | 4 | Amps | | Type-T or Slo Blo | External fuse with UL/SEMKO rated holder |

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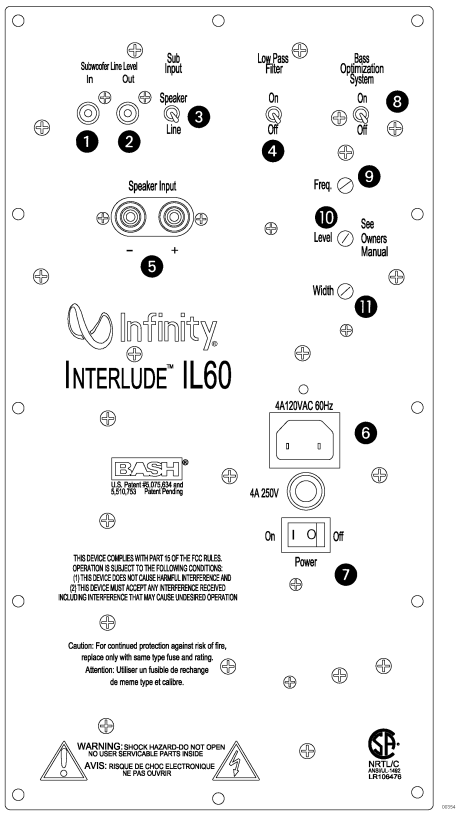
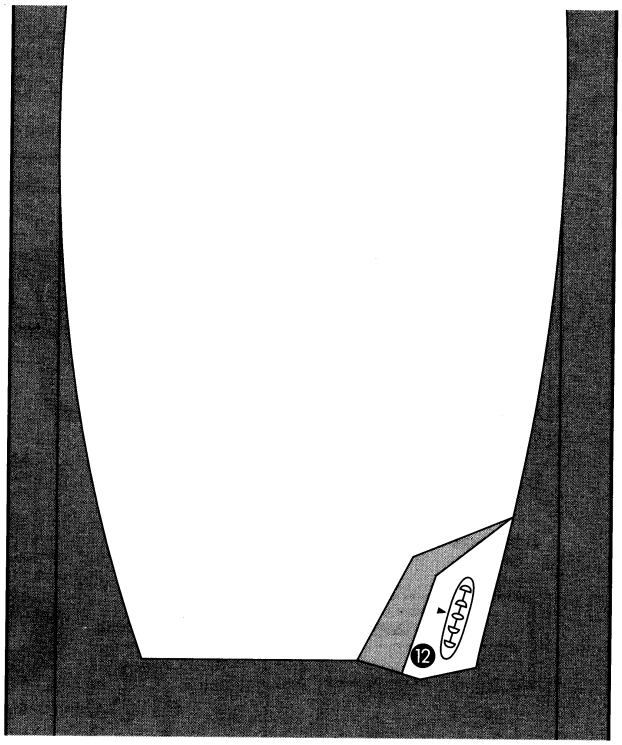
# Controls and Connections

## Controls and Connections

### Rear Panel


Subwoofer Line Level In Out
Sub Input
Speaker Line
Low Pass Filter On Off
Bass Optimization System On Off
Speaker Input
Freq.
Level
See Owners Manual
Width
Infinity
INTERLUDE™ IL60
4A120VAC 60Hz
4A 250V
On Off
Power
THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES.
OPERATION IS SUBJECT TO THE FOLLOWING CONDITIONS:
(1) THIS DEVICE DOES NOT CAUSE HARMFUL INTERFERENCE AND
(2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED
INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION
Caution: For continued protection against risk of fire,
replace only with same type fuse and rating.
Attention: Utiliser un fusible de rechange
de meme type et calibre.
WARNING: SHOCK HAZARD-DO NOT OPEN
NO USER SERVICABLE PARTS INSIDE
AVIS: RISQUE DE CHOC ELECTRONIQUE
NE PAS OUVRIR
NRTL/C
LR106476

### Front Panel



❶ Subwoofer Line-Level-In Connector

❷ Subwoofer Line-Level-Out Connector

❸ Subwoofer Input Selector

❹ Low-Pass Filter Switch

❺ Speaker-Level Input

❻ AC-Cord Input

❼ Power Switch

**Bass Optimization System**

❽ Bass Optimization System Selector

❾ Center-Frequency Adjustment

❿ Bass Optimization System Level

⓫ Bandwidth Adjustment

⓬ Subwoofer Level Control

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# Controls and Connections

The Interlude IL50 and IL60 offer unprecedented flexibility for connecting the system to any type of audio or home-theater system. Consult the table at right to determine which system description most closely matches your own, then follow the hook-up method corresponding to that system.

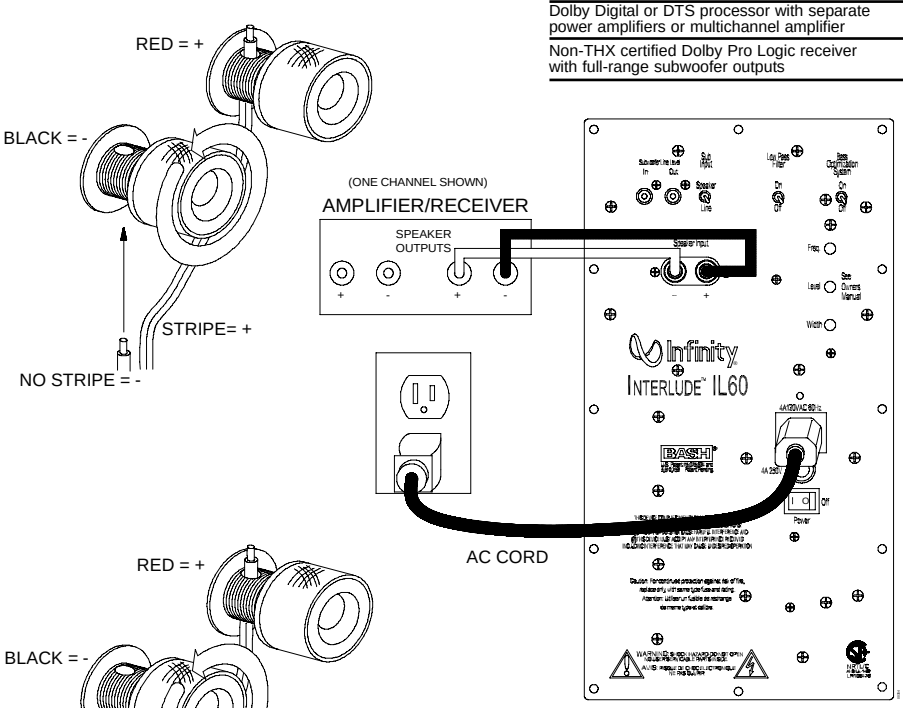
If none of these system configurations seem to match yours, consult your dealer or Infinity customer service for direction on how best to hook up your system.

For methods 2, 3a, 3b and 4, make sure all bass-management features are properly set. The Audio channels should all be set to “Small” or “High-Pass” and the subwoofer set to “On.”

| System Type | Connection Methods |
|---|---|
| 2-Channel receiver or integrated amplifier that has no subwoofer output or Pre-out/Main-In connectors | 1 |
| 2-Channel receiver or integrated amplifier with preamp output and input connectors | 2 |
| 2-Channel system with separate preamplifier and power amplifier | 2 |
| Dolby* Pro Logic* with THX®, Dolby Digital, or DTS® receiver with a filtered subwoofer (or LFE) output connector | 3a |
| Dolby Digital or DTS processor with separate power amplifiers or multichannel amplifier | 3b |
| Non-THX certified Dolby Pro Logic receiver with full-range subwoofer outputs | 4 |

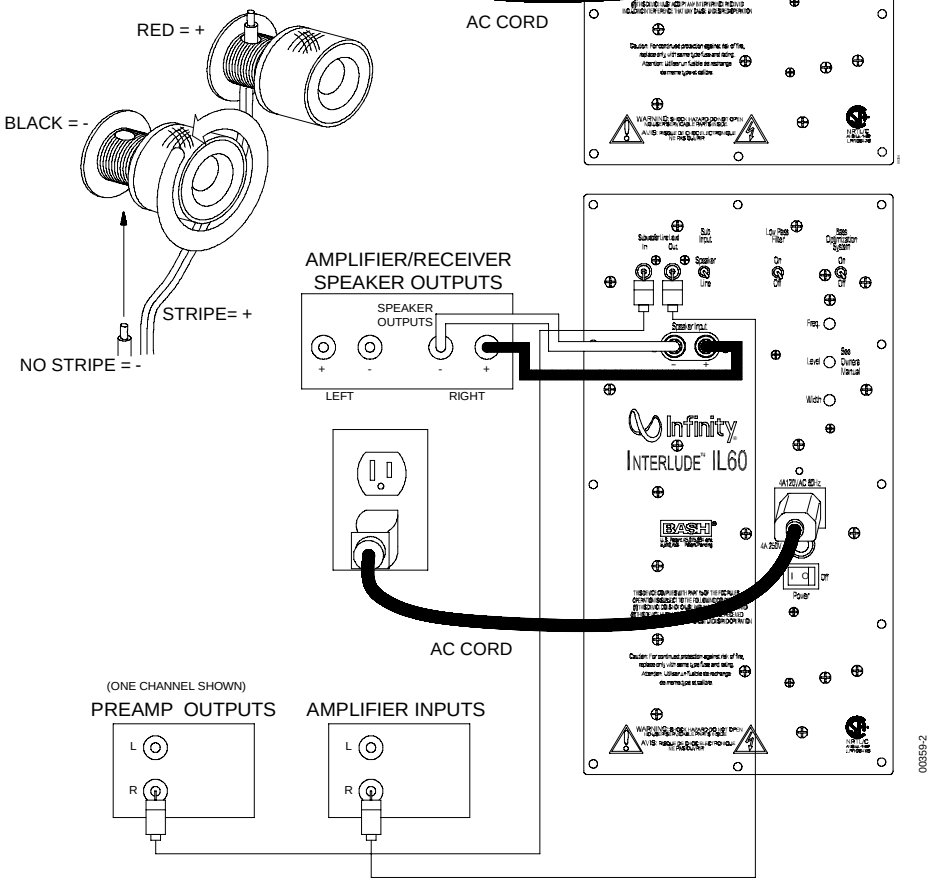
METHOD 1

1. LOOSEN TERMINALS
2. INSERT BARE END: TIGHTEN TERMINALS
3. SET **INPUT SUB** ❸ TO "SPEAKER"
4. SET **LOW-PASS FILTER** ❹ "ON"




METHOD 2

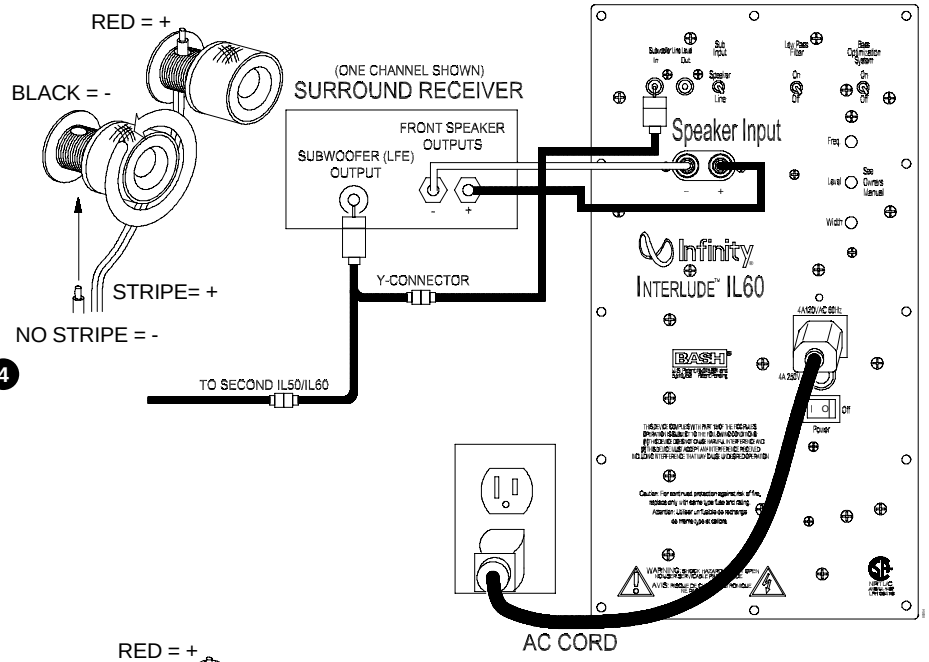
1. LOOSEN TERMINALS
2. INSERT BARE END: TIGHTEN TERMINALS
3. SET **INPUT SUB** ❸ TO "LINE LEVEL"
4. SET **LOW-PASS FILTER** ❹ "ON"



# Controls and Connections (Cont.)

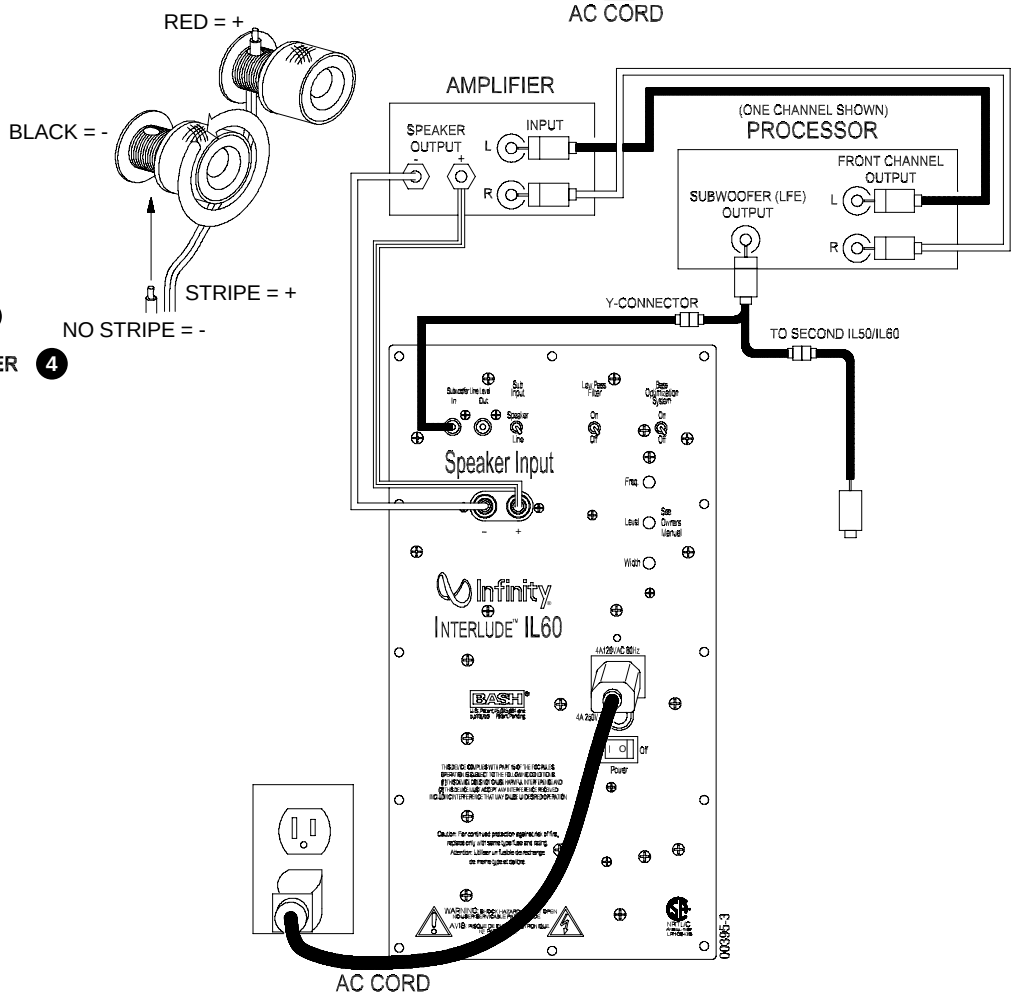
METHOD 3a

1. LOOSEN TERMINALS
2. INSERT BARE END: TIGHTEN TERMINALS
3. SET **INPUT SUB** ❸ TO "LINE LEVEL"
4. SET **LOW-PASS FILTER** ❹ TO "OFF"




METHOD 3b

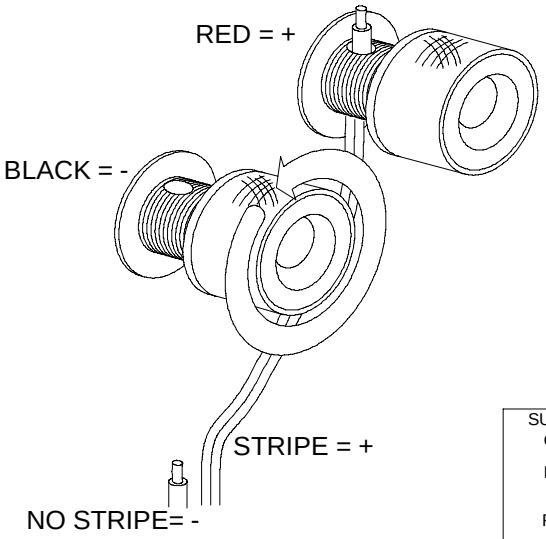
1. LOOSEN TERMINALS
2. INSERT BARE END: TIGHTEN TERMINALS
3. SET **INPUT SUB** TO "LINE LEVEL" ❸
4. SET **LOW-PASS FILTER** ❹ TO "OFF"

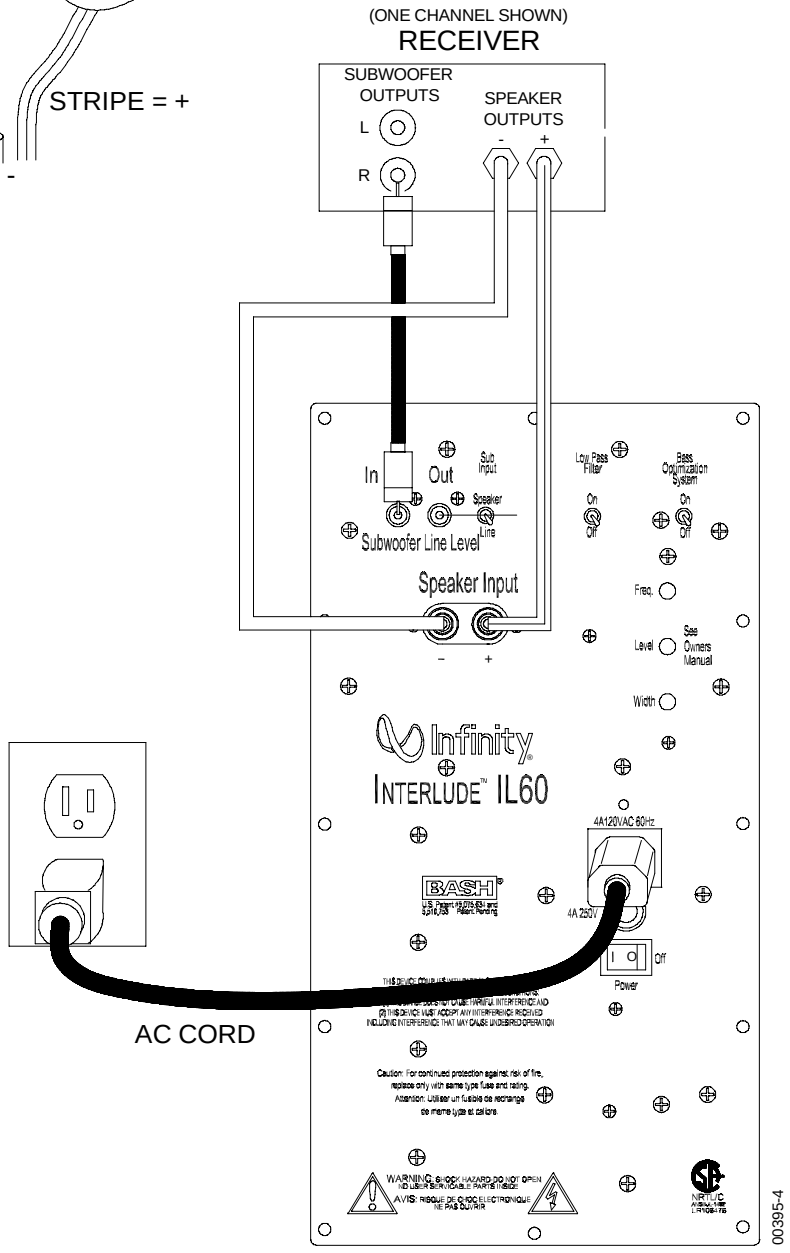


# Controls and Connections (Cont.)

METHOD 4

1. LOOSEN TERMINALS
2. INSERT BARE END: TIGHTEN TERMINALS
3. SET **INPUT SUB** ❸ TO "LINE LEVEL"
4. SET **LOW-PASS FILTER** ❹ TO "ON"




## Final Positioning

After correctly connecting the loudspeaker and verifying that both the subwoofer and main section portions are playing, it is time to optimize the system for your particular listening room.

Earlier, you placed the loudspeakers in their general location. Finding the exact location for optimum performance sometimes only involves moving the speakers a few inches in any direction. We urge you, therefore, to experiment with placement until your speakers deliver their full potential. When the speakers are moved inward (toward each other) there is generally better focus of instruments and vocalists; however, moving the speakers too close together can reduce the spaciousness of the stage effect and you may need to experiment with the trade-off between focus and imaging. If your listening room is larger than average and your listening position is relatively far from the speakers, wider placement of the speakers may be required.

# Operation/Bass Optimization System™

## Operation

### Power On

Plug your speakers' AC cords into a wall outlet. Do not use the outlets on the back of the receiver.

Initially set the subwoofer Level Controls (12) to the "0" position.

Turn on your subwoofers by pressing the power buttons (7) on the rear panel of the speakers.

Turn on your entire audio system and start a CD or movie soundtrack at a moderate level.

### Adjust Gain

Turn both subwoofer Level Controls (12) up to the "5" position (half way). If no sound emanates from the subwoofers, check the AC-line cords and input cables. Are the connectors on the cables making proper contact? Are the AC plugs connected to "live" receptacles? Have the power buttons (7) been pressed to the "On" position? (Note: The Level Control on the front panel will turn green when the power is on and there is a signal present. After about ten minutes with no audio signal, the indicator will turn red.) Once you have confirmed that the subwoofers are active, proceed by playing a CD, record or cassette. Use a selection that has ample bass information.

Set the overall volume control of the preamplifier or stereo to a comfortable level. Adjust the subwoofer Level Controls (12) until you obtain a pleasing blend of bass. Bass response should not overpower the room but rather be adjusted so there is a harmonious blend across the entire musical range. Many users have a tendency to set subwoofer volume too loud, adhering to the belief that a subwoofer is there to produce lots of bass. This is not entirely true. A subwoofer is there to enhance bass, extending the response of the entire system so the bass can be felt as well as heard. However, overall balance must be maintained or the music will not sound natural. An experienced listener will set the volume of the subwoofer so its impact on bass response is always there but never obtrusive.

## Bass Optimization System™

Infinity's Bass Optimization System is a simple-to-use, yet sophisticated, low-frequency calibration system. Each Interlude IL50 or IL60 subwoofer contains a parametric equalizer that you can adjust by following the directions below. By following these instructions, you can improve the sound of your system.

### The Bass Optimization System Goal

It is a fact of audio that what we hear at low frequencies is determined as much or more by the listening room than by the loudspeaker itself. Placement of the loudspeakers and listeners and the acoustical characteristics of the room surfaces are all important determinants of bass quantity and quality. In most practical situations, there is little that can be done about this, except for patient trial-and-error repositioning of the loudspeakers and listeners. Usually, the practical constraints of a living space and the impracticality of massive acoustical treatment mean that equalization is the only practical solution.

Professional sound engineers routinely employ sophisticated measurement systems and equalizers to optimize speakers to the installation. This was never practical for the home audiophile. This is why the Bass Optimization System was created. It enables you to identify the dominant low-frequency response characteristic of your room. Once you know the problem, the Bass Optimization System provides the tools needed to optimize the low-frequency characteristics of the speakers to the room they are in, exactly as the professional sound engineers do it.

### Preparations

Before beginning the bass tests, please check the following:

- Make sure all three Bass Optimization System controls, (9), (10) and (11), on both speakers are turned fully clockwise.
- Make sure the loudness contour (if any) on your receiver/processor/preamp is turned off.
- Set the tone controls (Bass and Treble) to their center or flat positions.
- Bypass all surround and effects features of your receiver/processor/preamp or set to Stereo Bypass.
- If you are using a multichannel surround processor or receiver, make sure all bass-management features are properly set. The Audio channels should all be set to "Small" or "High-Pass" and the subwoofer set to "On."
- Set the Bass Optimization System selectors (8) to "On."

For best results, it is recommended that all major furnishings are in place and that all doors and windows in the listening area are in their normal positions. That is, if you normally listen to music with all doors closed, then this is how they should be during this procedure.

To solve a problem, it helps to first identify whether you have one and, if so, what it is. First, play a variety of music and films with energetic bass sounds, like bass guitar, kick drum, keyboards, etc. A kick drum should produce a tight "thump" not a flabby "boom." Bass melody or harmony lines should have notes that are about equally loud. If some notes disappear, or stand out because they are consistently too loud, there is a problem. Disappearing notes have to be handled by moving the listening position, or the loudspeakers, to slightly different locations. Often, but not always, this will be enough. Excesses in bass tend to be most annoying, and energetic resonances that cause "boomy" or "lumpy" bass can be truly aggravating over a period of time. Infinity's Bass Optimization System can fix this.

So, the first step is to exercise your music collection, and listen for low-frequency problems that crop up in several different recordings. Something that only happens in one recording is likely to be a problem in the recording – it happens! If you identify something that is consistently wrong, select a record that shows it very clearly, and put your CD/DVD player into a repeat mode (A-B repeat is especially helpful, because you can isolate a short musical passage).

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# Bass Optimization System™ (Cont.)

NOTE:It is important that you make the same adjustments to both loudspeakers.

Set the Bass Optimization System Bandwidth adjustments ⓫ to a middle position (10 clicks from a fully clockwise position) and set Level adjustments ⓾ for a –6dB (8 clicks from a fully clockwise position). Then,while the music is playing,sit in your favorite chair and have somebody else slowly adjust the Frequency controls ❾ from fully clockwise to fully counter-clockwise. At a certain frequency, you should hear the problem lessen and the overall bass performance improve. When you are satisfied that you have found the best frequency, have your assistant vary the Levels ⓾ slowly up and down until you have maximized the improvement.If you have really keen ears, you can also have the Bandwidth controls ⓫ adjusted for maximum benefit.

While the Bass Optimization System allows the listener to fine-tune the bass response to sound best in a particular room,some listeners don't have the skill or desire to adjust their system by ear. In order to facilitate quicker and more accurate results, Infinity has developed an optional test and measurement kit that allows the user to perform a series of measurements and aids him/her in properly setting the Bass Optimization System controls. With the addition of this kit,the Bass Optimization System becomes truly room-adaptive.

The kit consists of the following:a test CD, a sound-level meter that is specifically calibrated for low frequencies, and something we call a "Q-Finder, "a device to help find the width of the measured curve and, finally, a measurement template. It works as follows. The listener plays the tones from the test CD and records the relative output level of each test tone, using the sound-level meter, on the provided measurement template. After all the tones are complete, the template contains a response curve for the frequencies below 100Hz. The user simply notes the frequency of the largest bass peak,calculates the correct amount of attenuation,and uses the "Q-Finder" to determine the width of the curve. These three values are dialed into the Bass Optimization System controls located on the speaker.The entire process takes less than twenty minutes.

If your dealer does not stock the Bass Optimization System test and measurement kit,you may purchase it directly from Infinity. U.S. residents can visit our Web site at www.infinitysystems.com or call 1-800-553-3332.Canadian residents should contact their dealer or call 1-800-567-3275.

Ask for Infinity part number 335852-002.

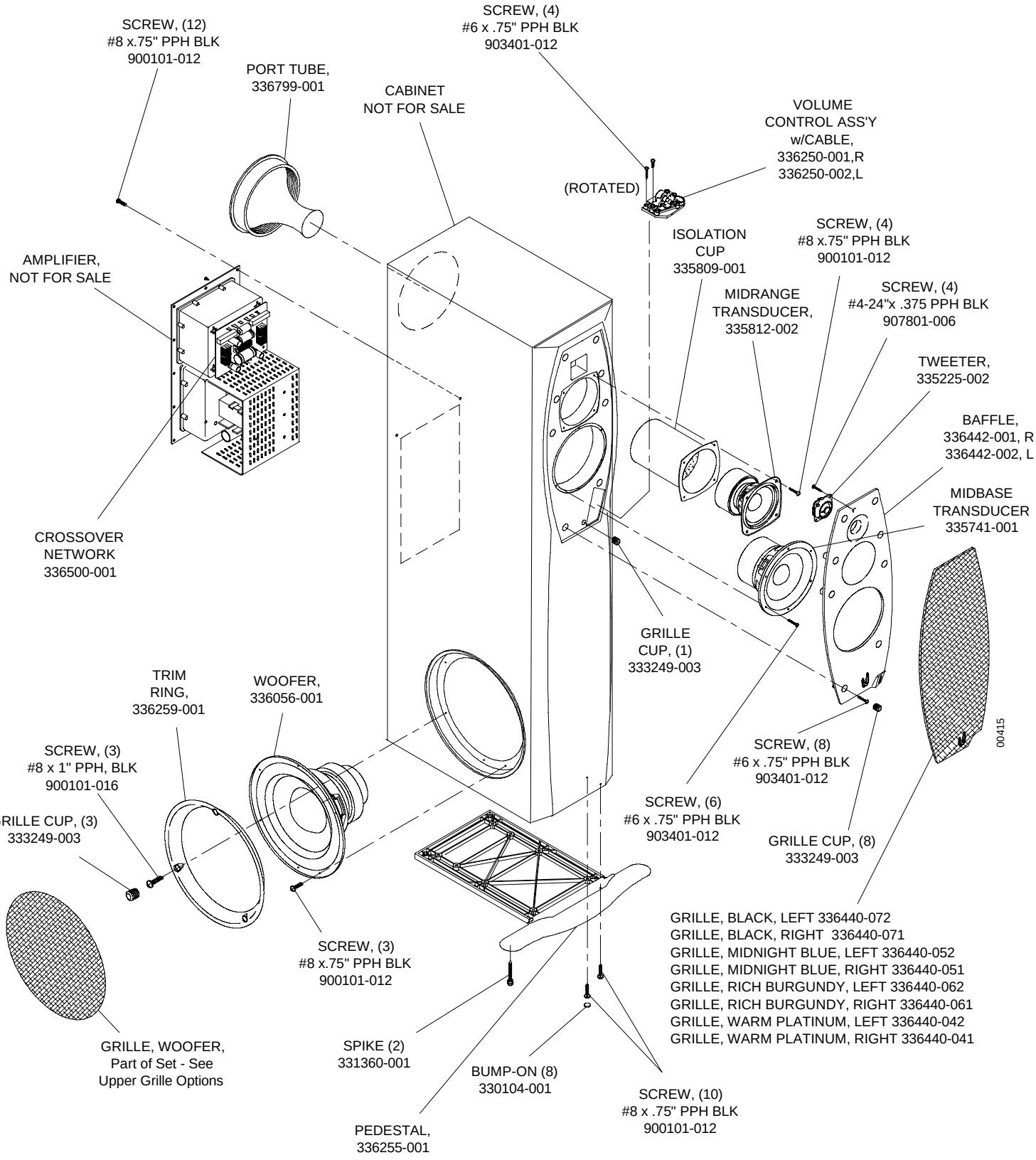
# Mechanical Parts List

| | |
|---|---|
| IL60 Complete Amplifier Ass'y | N/A |
| Grille Set (one Upper and one Woofer): | |
| Grille, Black, Left | 336440-072 |
| Grille, Black, Right | 336440-071 |
| Grille, Midnight Blue, Left | 336440-052 |
| Grille, Midnight Blue, Right | 336440-051 |
| Grille, Rich Burgundy, Left | 336440-062 |
| Grille, Rich Burgundy, Right | 336440-061 |
| Grille, Gray, Left | 336440-042 |
| Grille, Gray, Right | 336440-041 |
| Mid-Bass, 6-1/2" C.M.M.D., shielded, 4.5 ohms±10% | 335741-001 |
| Midrange, 4" C.M.M.D., shielded, 4.6 ohms±10% | 335812-002 |
| Woofer, 12", C.M.M.D., shielded, 3.4 ohms±10% | 336056-001 |
| Tweeter, 1", C.M.M.D., shielded, 3.5 ohms±10% | 335225-002 |
| Volume Control Assembly (Left) | 336250-002 |
| Volume Control Assembly (Right) | 336250-001 |
| Passive Crossover Network | 336500-001 |
| Port Tube | 336799-001 |
| Pedestal | 336255-001 |
| Cup, Grille, (12) | 333249-003 |
| Baffle, Front, Left | 336442-002 |
| Baffle, Front, Right | 336442-001 |
| Bump-On, Foot (8) | 330104-001 |
| Midrange Cup | 335809-001 |
| Trim Ring, Woofer | 336259-001 |

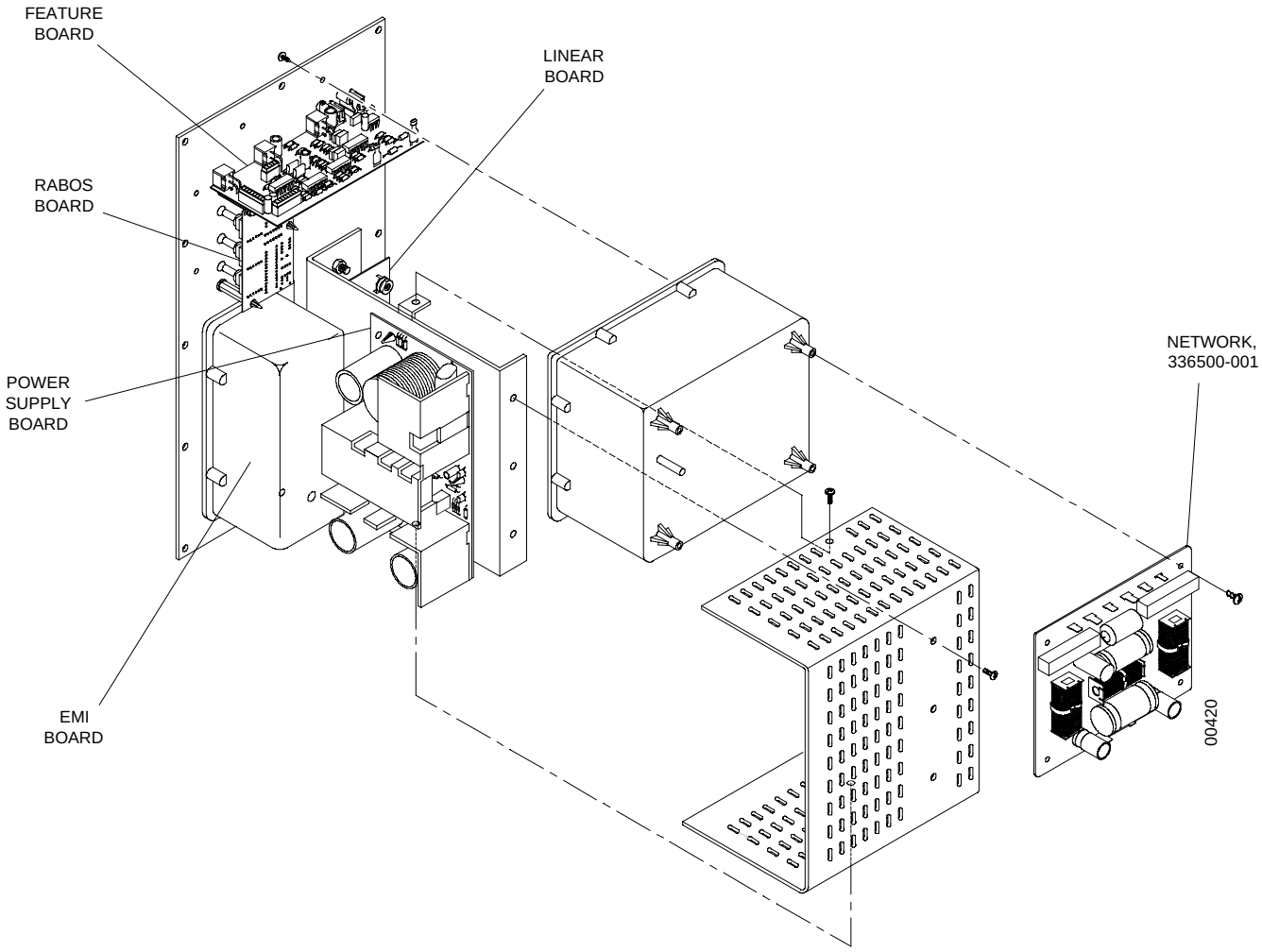
PACKAGING

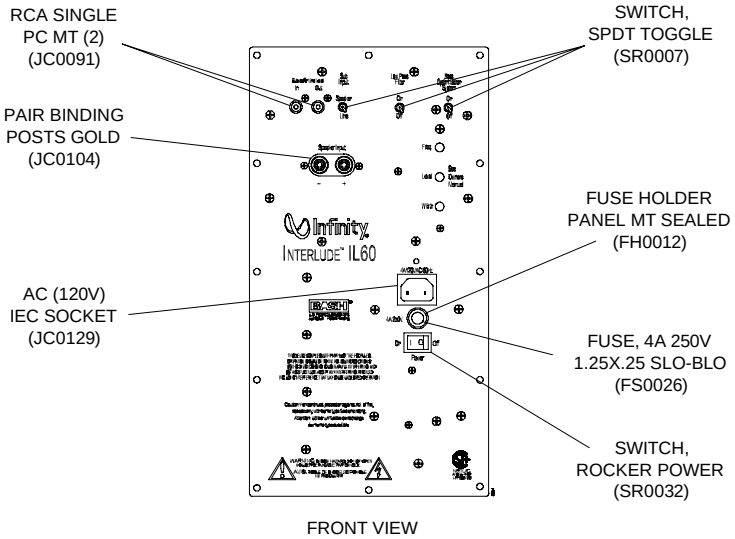
| | |
|---|---|
| Owners Manual, IL50,60 | 335832-001 |
| Grille Option Literature | 336503-002 |
| Grille Assembly | See Options Above |
| Pad, End, Bottom/L | 336488-003 |
| Pad, End, Bottom/R | 336488-002 |
| Pad, End, Top | 336488-001 |
| Protective Corners (4) | 335692-003 |
| Outer Carton | 336489-001 |
| Survey Card | 330033-001 |
| Warranty Card | 335841-001 |
| Spike Foot Set | 331360-001 |
| Power cord 120v US (15') | 336658-115 |
| RABOS screwdriver w/bag | 335848-002 |

# Exploded View



# Exploded View of Amplifier





RCA SINGLE PC MT (2) (JC0091)
SWITCH, SPDT TOGGLE (SR0007)
PAIR BINDING POSTS GOLD (JC0104)
FUSE HOLDER PANEL MT SEALED (FH0012)
AC (120V) IEC SOCKET (JC0129)
FUSE, 4A 250V 1.25X.25 SLO-BLO (FS0026)
SWITCH, ROCKER POWER (SR0032)
Infinity
INTERLUDE IL60

FRONT VIEW

# Service Tips

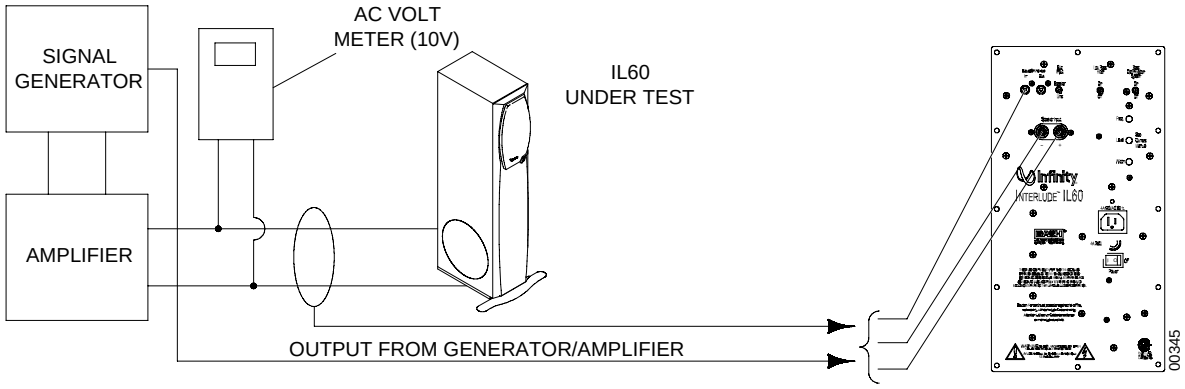
SERVICING THE VOLUME CONTROL PCB (part# 336250-001 Right or 336250-002 Left)

If the VOLUME CONTROL PCB has to be serviced for any reason:

1. Remove the grille.
2. Extract all (8) rubber grille retainers; this can be accomplished by carefully pulling them out of their cavities with long-nosed pliers or similar tool.
3. Remove the (8) Phillips screws that are now exposed.
4. Lift the front baffle off the cabinet; this exposes the VOLUME CONTROL PCB.
5. Remove the (3) plated mounting screws and unplug the molex connector from the PCB.
6. 10K Potentiometer part# is RP0097 for right control, RP0099 for left control; LED part# is DL0014.

00324-1

# Test Set Up and Procedure




**SYSTEM AURAL SWEEP TEST**

**Equipment needed:**

- Function/signal generator/sweep generator
- Integrated Amplifier
- Multimeter
- Speaker cables

**General Unit Function (UUT = Unit Under Test)**

Switches on the amplifier faceplate:

Sub Input to “Line Level”
Low Pass Filter to OFF
Bass Optimization system to OFF

1. From the signal generator, connect one line level (RCA) cable to the IL60 Line Level Input jack on the UUT.
2. On the front of the unit, turn the LEVEL control full counterclockwise (1).
3. Turn on generator, adjust to **100mV, 40 Hz**.
4. Plug in UUT; turn the power switch ON. LED should be Red. Turn LEVEL control full clockwise (10).
5. LED should now be Green; immediate bass response should be heard and felt from rear port tube opening.
6. Turn off generator, turn LEVEL control fully counterclockwise (1), disconnect RCA cable.
7. Connect one pair of speaker cables to Speaker Level input terminal on UUT. Cables should be connected to an integrated amplifier fed by the signal generator.
8. Switch Sub Input on the amplifier faceplate to “Speaker”.
9. Turn on generator and adjust so that speaker level input at the amplifier is **1.5V, 50 Hz**. Turn LEVEL control full clockwise (10).
10. Green LED should light, immediate bass response should be heard and felt from the port tube opening.

**Sweep Function**

1. Follow steps 7-10 above, using a sweep generator as a signal source.
2. Sweep generator from 20Hz to 20kHz. Listen to the cabinet and drivers for any rattles, clicks, buzzes or any other noises. If any unusual noises are heard, remove woofer and test.

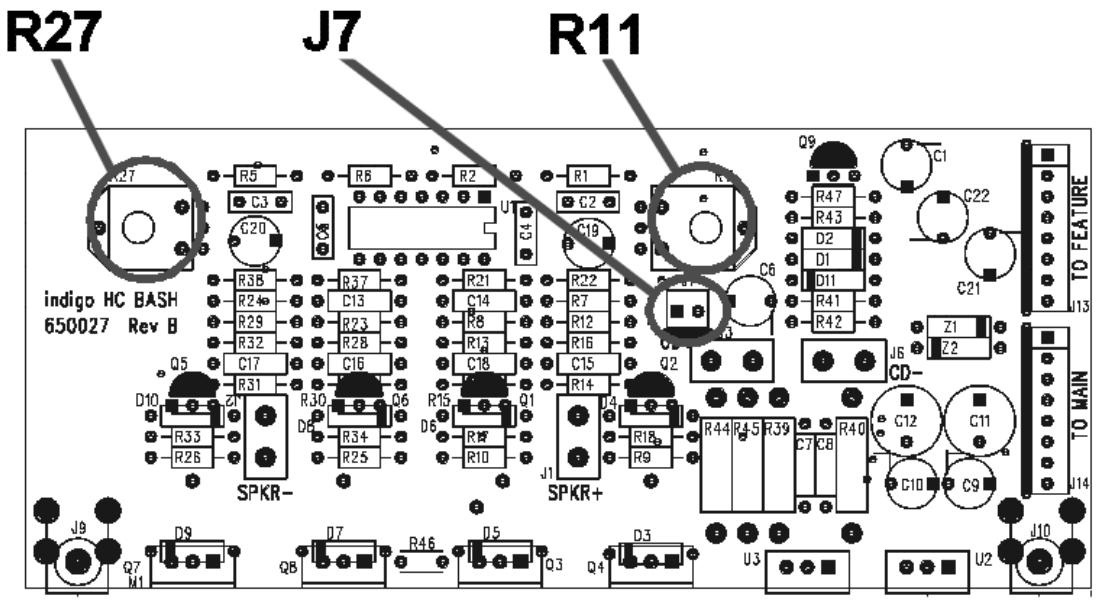
**Driver Function (Woofer)**

1. Remove woofer from cabinet; detach + and - wire clips.
2. Check DC resistance of woofer; it should be **3.4 ohms** ±10%.
3. Connect a pair of speaker cables to driver terminals. Cables should be connected to an integrated amplifier fed by a signal generator. Turn on generator and adjust so that speaker level output is **5.0V**.
4. Sweep generator from 20Hz to 1kHz. Listen to driver for any rubbing, buzzing, or other unusual noises.

## IL60 ADJUST BIAS PROCEDURE

**(Mandatory when any output MOSFET transistors Q3,4,7,8 are replaced)**

1. Amplifier should be unplugged and OFF.
2. Remove Amp assembly from cabinet; remove rear plastic cover if present. All wires exiting the cover can remain connected unless they will prevent you from removing the amplifier or accessing potentiometers on the Linear board PCB in the following steps.
3. Locate the Linear board assembly (PCB with the output transistors)
4. Adjust R11 and R27 fully Counter Clockwise. See diagram below.
5. Apply 120 VAC power to unit, Turn power switch ON.
6. Verify LED illuminates on the front gain control dial unless you have disconnected the plug.
7. Connect voltmeter set to DC millivolt range to twin pins on terminal J7, on Linear board
8. Verify initial voltage is less then 0.1 mV.
9. Adjust R11 Clockwise until voltmeter reads **0.3 mV** + the initial current from step #8.
10. Adjust R27 Clockwise until voltmeter now reads **0.6 mV** + the initial current from step #8.
11. Turn amplifier OFF. Disconnect AC power to unit.
12. Remove voltmeter from terminal J7.
13. Replace cover (if present), wires if disconnected, and replace amplifier back into cabinet.



# Service Bulletin

Service Bulletin INF2000-04 - December 2000 — Warranty labor rate: MINOR repair

To: All Infinity Service Centers

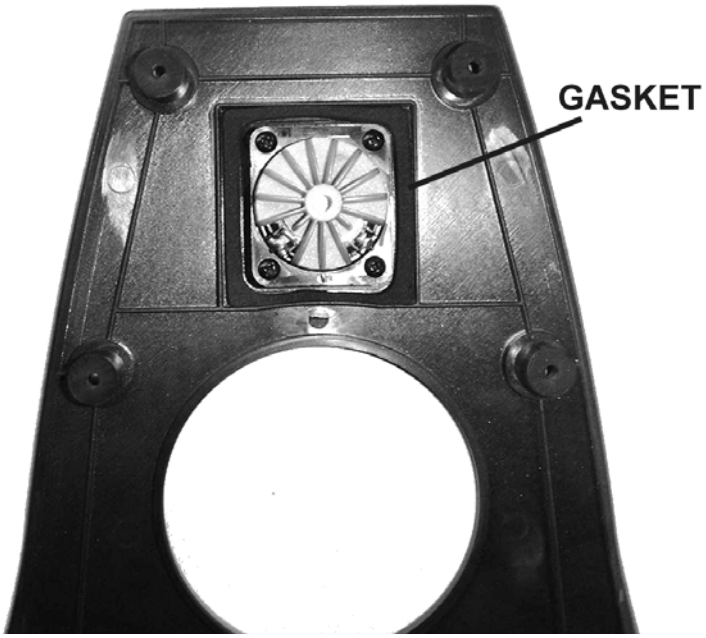
Model: Interlude IL60

Subject: Air Leak or Buzzing from Front Baffle

Some early versions of the Interlude IL60 loudspeaker may need an additonal gasket surrounding the tweeter. The original gasket is located behind and is affixed to the front baffle.

**In the event you receive an Interlude IL60 loudspeaker with the complaint: "There is buzzing or an air leak coming from the upper part of the front baffle", perform the following modification:**

1) Remove the loudspeaker grille.
2) Extract the (8) grille cups from their cavities with a needle-nosed pliers or similar tool.
3) Remove the (8) Phillips screws holding the front baffle to the cabinet
4) Remove the front baffle; unplug the two faston connections to the tweeter terminals.
5) Apply a new rectangular gasket, Infinity part# 336050-003, *on top of the present gasket*, surrounding the tweeter. Final gasket(s) height should rise above the plastic "ledge" surrounding the tweeter.
6) Plug both faston connections back on the tweeter terminals.
7) Replace the front baffle, Phillips screws, grille cups, and front grille.



# Service Bulletin

Service Bulletin INF2001-04 Rev2 – May 2005 | Warranty labor rate: MINOR repair

To: All Infinity Service Centers

Model: Interlude and Intermezzo IL50, IL60, IL100s, IL120s, IM1.2s, IM4.1t

Subject: No Output

**In the event you receive an Interlude or Intermezzo loudspeaker with the complaint: "There is no output, and the LED on the volume control does not light, red or green", check the item listed below:**

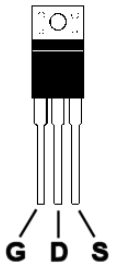
1) Check the line fuse to make sure it's not damaged. Replace if necessary

| | | |
|---|---|---|
| IL50, IL100s | 3A | Infinity part# FS0022 |
| IL60, IL120s | 4A | Infinity part# FS0026 |
| IM1.2s, IM4.1t | 6A | Infinity part# FS0027 |

**If the fuse is intact, or the unit still does not function, check the power supply portion of the amplifier circuit, described below:**

2) Refer to the Exploded view page for detailed instructions on amplifer removal from the enclosure.
3) Remove all connectors and screws necessary to detach the Power Supply PCB from the main chassis heatsink. Squeeze the heads of the plastic standoffs with long-nosed pliers to detach the PCB from the heatsink.
4) Refer to the illustration on page 2. Check the DC resistance of following parts, in circuit, with a DMM:

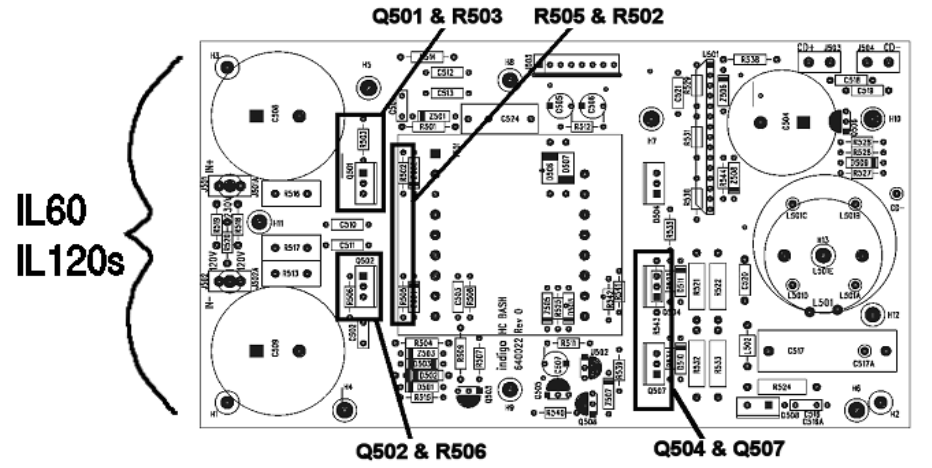
| | | | |
|---|---|---|---|
| IL120s IL60 | IRF740 MOSFETS **Q501, Q502** Infinity part# QM0055 | D to S or S to D<br>G to S or S to G<br>D to G or G to D | Should measure >28K ohms*<br>Should measure >400 ohms<br>Should measure >28K ohms* |
| | 22 Ohm 0.6W Resistors **R506, R503** Infinity part# RM0340 | Should measure 22 ohms ±1% | |
| | 422 Ohm 1/4 watt Resistors **R505, R502** Infinity part# RM0397 | Should measure 422 ohms ±1% | |
| IL50 IL100s | IRF740 MOSFETS **Q4, Q5** Infinity part# QM0055 | D to S or S to D<br>G to S or S to G<br>D to G or G to D | Should measure >28K ohms*<br>Should measure >400 ohms<br>Should measure >28K ohms* |
| | 22 Ohm 0.6W Resistors **R17, R20** Infinity part# RM0340 | Should measure 22 ohms ±1% | |
| | 475 Ohm 1/4 watt Resistors **R16, R19** Infinity part# RM0075 | Should measure 475 ohms ±1% | |
| IM1.2s IM4.1t | IRF740 MOSFETS **Q403,404,406,407** Infinity part# QM0055 | D to S or S to D<br>G to S or S to G<br>D to G or G to D | Should measure >28K ohms*<br>Should measure >400 ohms<br>Should measure >28K ohms* |
| | 22 Ohm 0.6W Resistors **R407,410,414,417** Infinity part# RM0340 | Should measure 22 ohms ±1% | |
| | 365 Ohm 1/4 watt Resistor **R408,411,415,418** Infinity part# RM0072 | Should measure 365 ohms ±1% | |

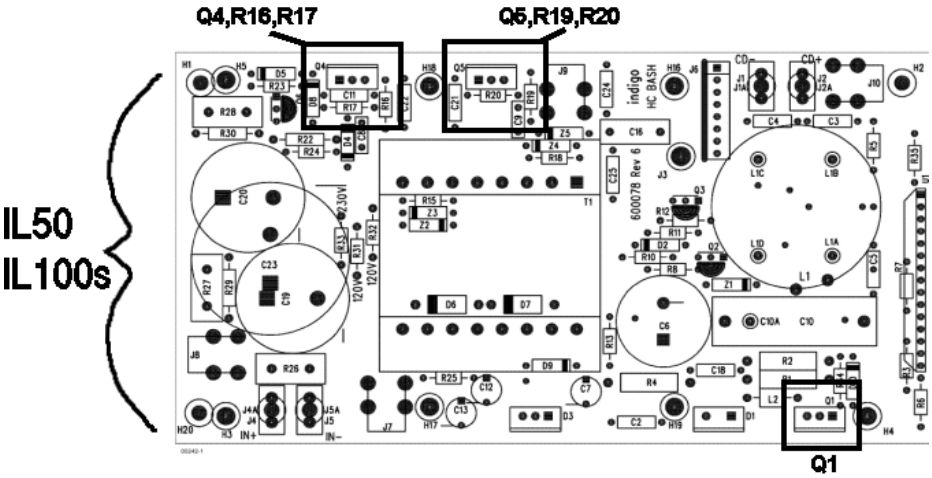


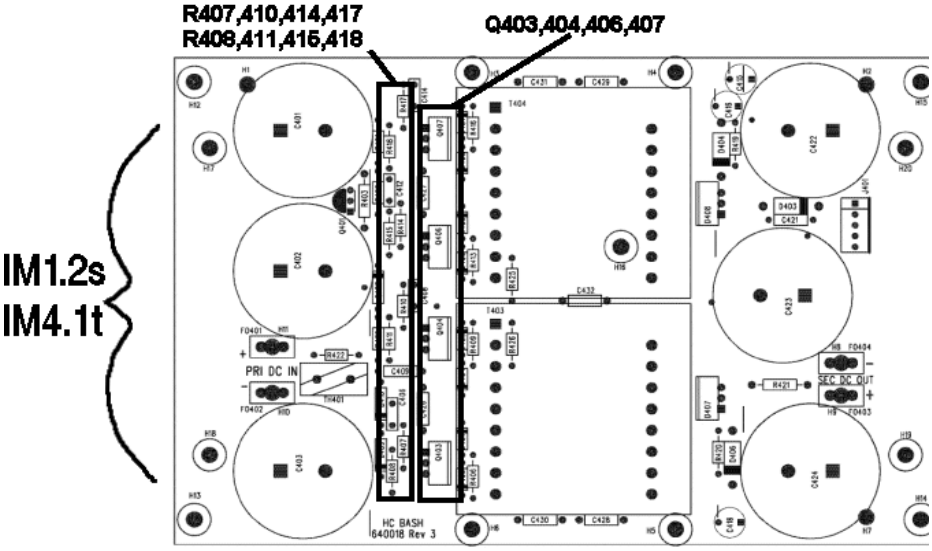

* The two transistor leads should be shorted together before these measurements are taken; the DMM leads will "charge" the circuit and the value may change, but should match the values above. Very low values that do not change indicate a shorted MOSFET.

5) Replace any defective parts above that show measured values lower than normal.
6) Reconnect J505 or J6 multicolor ribbon cable connector; remount the Power supply PCB; reconnect J501/502 or J4/J5 black/red Faston connectors.
7) All models except IM1.2S, IM4.1t: **temporarily DO NOT connect the pair of black/red "CD±" leads on the linear PCB).** Isolate the ends so they are not touching each other, or any conductive material. (For models IM1.2S, IM4.1t procedure is finished; replace amplifier).

8) Connect the subwoofer amplifier to an AC power source; turn the unit ON. Measure the DC voltage at the **"CD±"** wires; it should be 10-20 volts.
9) If it is 25 volts or greater, turn the amplifier OFF, disconnect from the power source, and replace:
   IL120S, IL60: **Q504,Q507** IRF640 on the Power Supply PCB, Infinity part# QM0015.
   IL50, IL100s: **Q1** IRF540 on the Power Supply PCB, Infinity part# QM0020.
10) If the voltage is normal, turn the amplifier OFF, disconnect from the power source, and reconnect the "CD±" leads.
11) Finish reassembling the amplifier, remount the heatsink, replace the amplifier in the cabinet and test the subwoofer.



# TECH TIPS

## Troubleshooting tips and solutions to common service problems

**For models: IL50, IL100s, MSW-1, IL60, IL120s, IM2.6, IM3.5c** **TIP# INFTT2003-03**

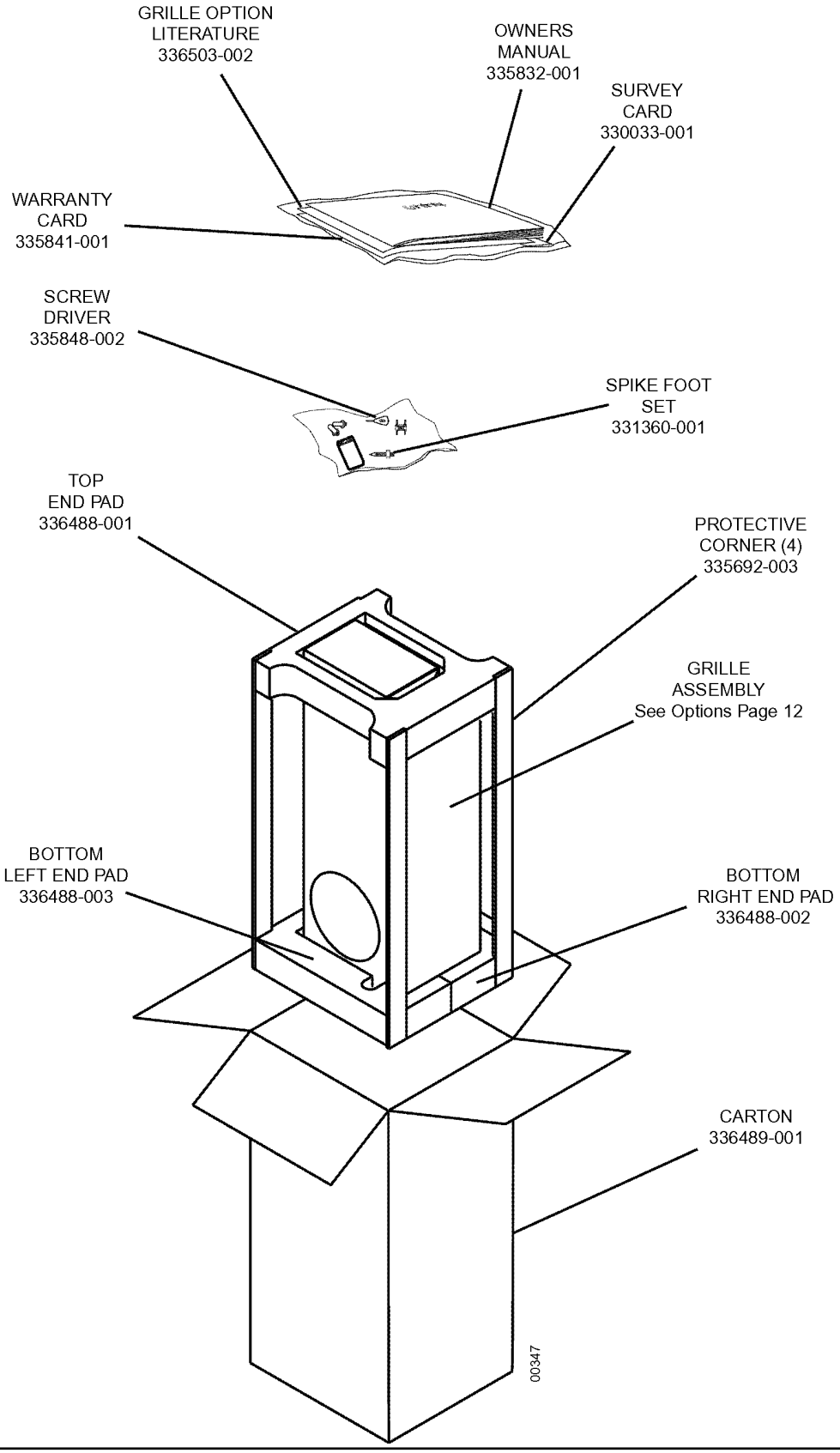
### Intermezzo, Interlude and Modulus MSW-1 Power Supply Repair

Recommended for instances where the PCB has been damaged, for the above models only:

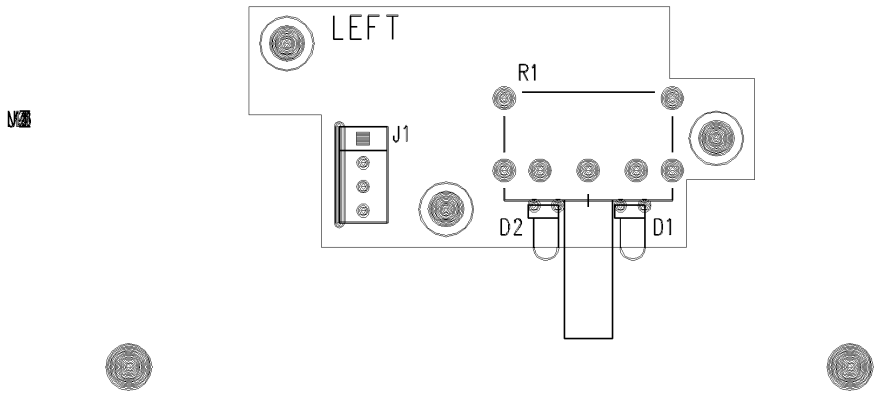
1) Change all MOSFETS, even for one device failure.
2) Clean and repair the PC board if required (See Tech Tip HCG2002-01 - Damaged Printed Circuit Boards).
3) Replace the Hybrid Bash Controller IC:
   **U1** in models: IL50,IL100s,MSW-1,IM2.6,IM3.5c
   **U501** in models: IL60, IL120s
   Infinity part # **HC1011**

**FAILURE TO FOLLOW THE INSTRUCTIONS ABOVE MAY RESULT IN UNIT FAILURE WHEN THE AMPLIFIER IS POWERED UP**

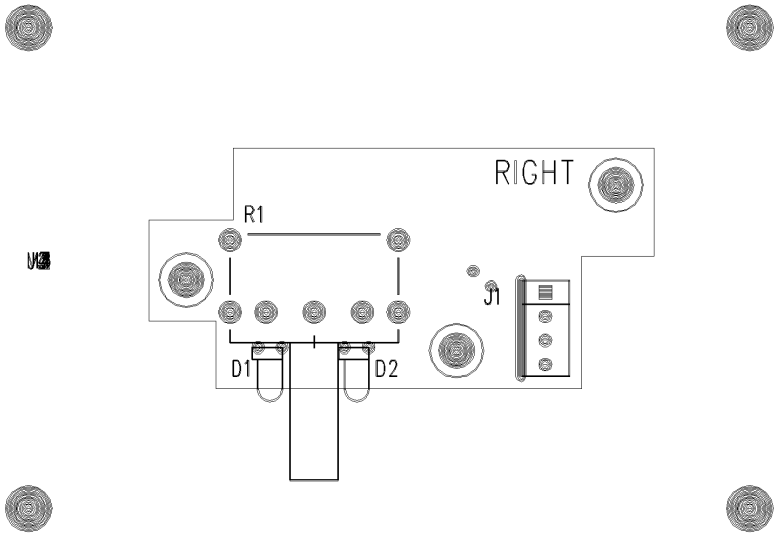
# Packaging


GRILLE OPTION LITERATURE 336503-002
OWNERS MANUAL 335832-001
SURVEY CARD 330033-001
WARRANTY CARD 335841-001
SCREW DRIVER 335848-002
SPIKE FOOT SET 331360-001
TOP END PAD 336488-001
PROTECTIVE CORNER (4) 335692-003
GRILLE ASSEMBLY See Options Page 12
BOTTOM LEFT END PAD 336488-003
BOTTOM RIGHT END PAD 336488-002
CARTON 336489-001
00347

# Volume Left/Right Boards




IL Volume Left Board

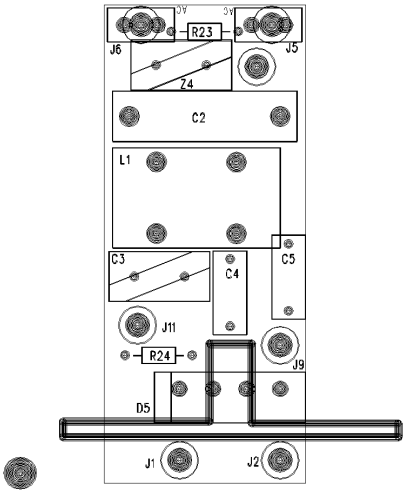



00343-1

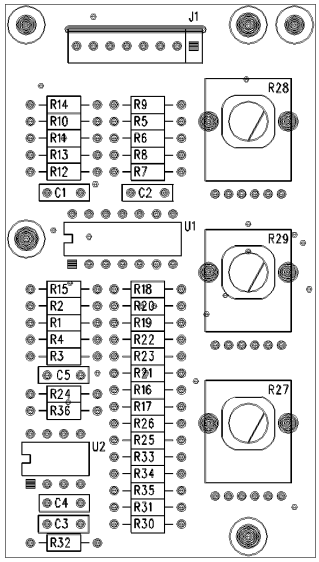
IL Volume Right Board

# IL60 L/R

## EMI FILTER/RABOS PCBs

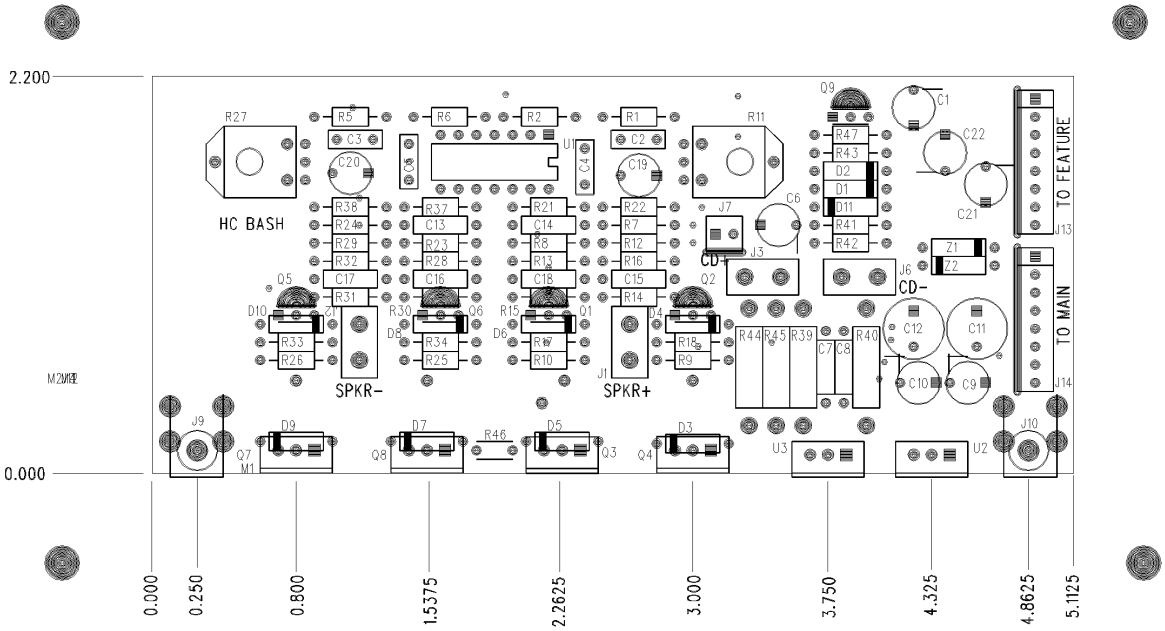



EMI FILTER BOARD

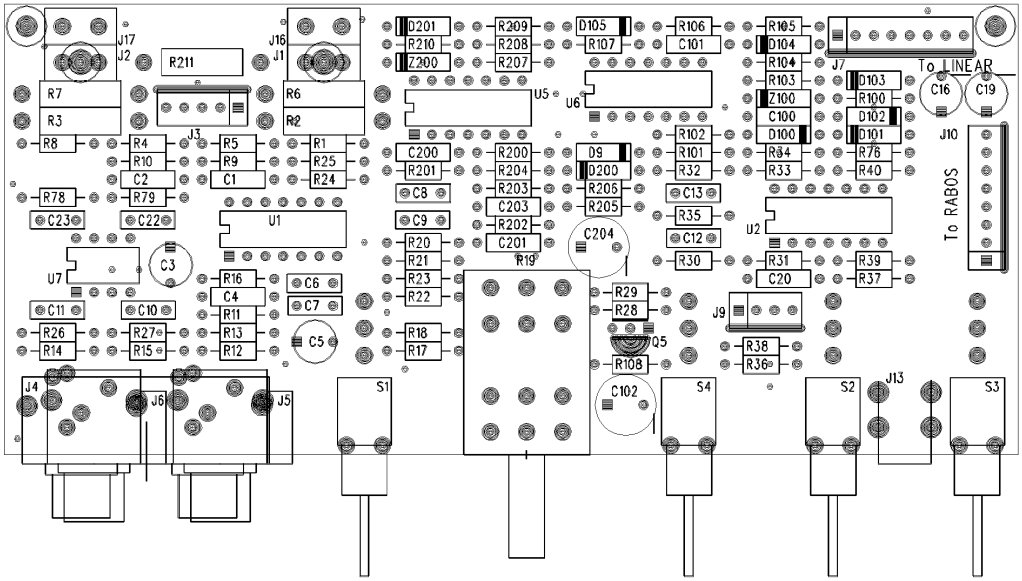



IL Robos Board

# IL 500W Linear/Feature Boards

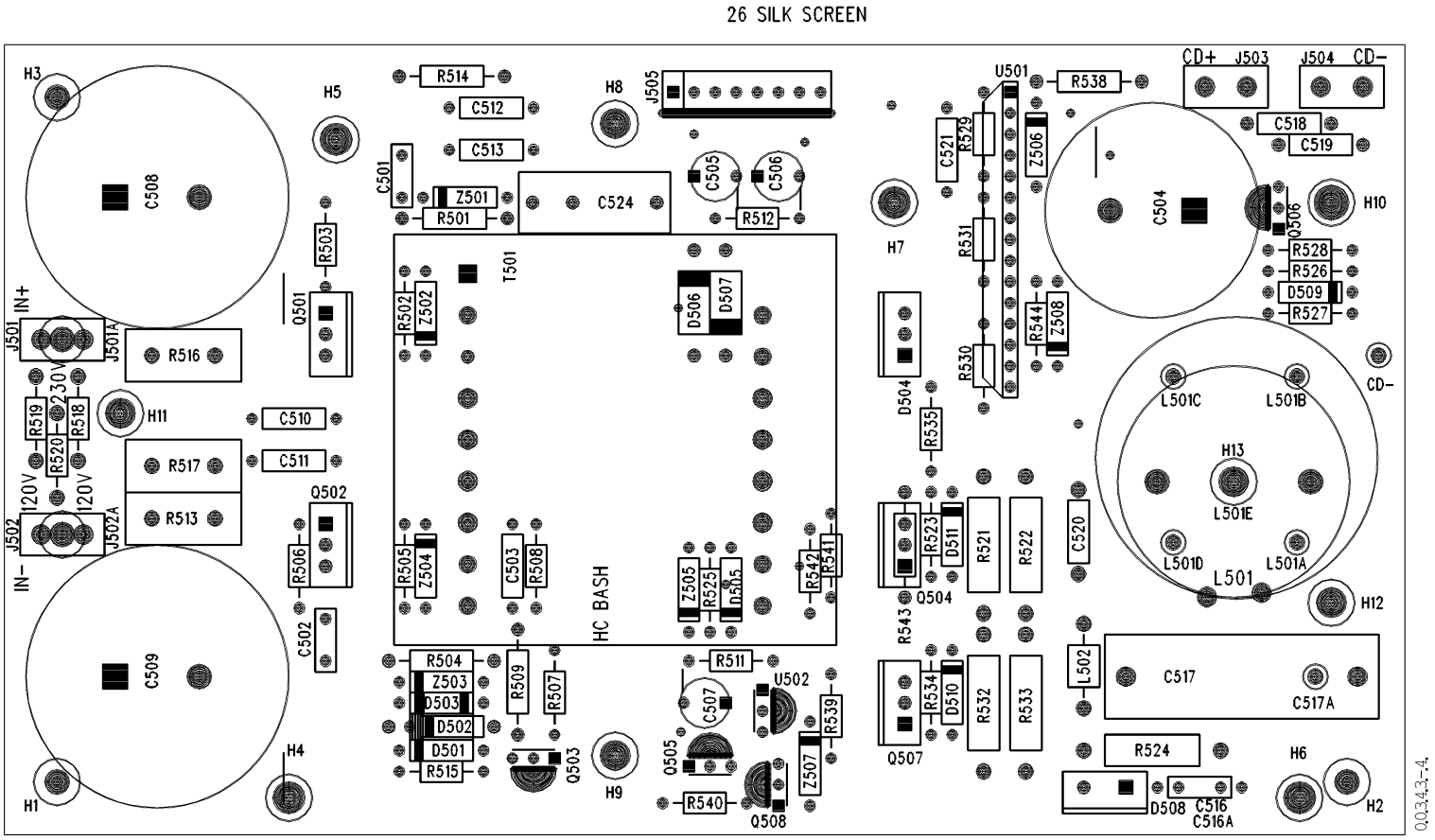



IL 500W Linear Board




IL Feature Board

# 500W HC BASH Power Supply (120V/230V Selectable)




D502A

500W HC BASH POWER SUPPLY (120V/230V Selectable)

# IL60 Electrical Parts List

**Feature PCB Assembly**

| Part# | Reference Designator | Qty | Description |
|---|---|---|---|
| | SEMICONDUCTORS | | |
| DS0001 | D9,D100,D101,D102,D103, D104,D105,D200,D201 | 9 | RECT, 100mA 75V SIGNAL 1N4148T |
| QM0035 | Q5 | 1 | JFET, N-CH J111 TO92 TR |
| UA0003 | U5,U6 | 2 | OPAMP, QUAD 14PIN DIL LM324N |
| UA0009 | U1,U2 | 2 | OPAMP, QUAD 14P DIL TL074/084 |
| UA0010 | U7 | 1 | OPAMP, DUAL 8PIN DIL TL082 |
| DZ0014 | Z100 | 1 | ZENER, 500MW 14V 5% 1N5244B |
| DZ0002 | Z200 | 1 | ZENER, 500mW 12V 5% 1N5242B |
| | CAPACITORS | | |
| CC0020 | C200 | 1 | CAP, CA 470PF 100V 5% |
| CC0025 | C203 | 1 | CAP, CA 1000PF 100V 10% |
| CC0072 | C1, C2, C4, C20, C100, C101 | 6 | CAP, CA 100PF 100V 10% |
| CC0082 | C201 | 1 | CAP, CA .1UF 50V 20% |
| CE0013 | C204 | 1 | CAP, E 47UF 50V 20% 5MMLS |
| CE0101 | C16, C19 | 2 | CAP, E 4.7UF 50V 85D 5X11 5MML |
| CE0103 | C102 | 1 | CAP, E 100UF 35V 85DEG 5MMLS |
| CE0106 | C5 | 1 | CAP, E 22UF 35V BP 8X11 5MMLS |
| CE0108 | C3 | 1 | CAP, E 4.7UF 16V BIPOLAR 5X11 |
| CF0045 | C7, C9, C10, C11 | 4 | CAP, F .1UF 63DC 5% 5MMLS |
| CF0055 | C6, C8 | 2 | CAP, F .22UF 63V 10% 5MMLS |
| CF0078 | C12, C13 | 2 | CAP, F .47UF 63V 10% 5MMLS |
| | RESISTORS | | |
| RC0001 | R211 | 1 | RES, CF 1K0 1/2W 5% |
| RC0192 | R3 | 1 | RES, CF 2K00 1/2W 5% |
| RC0273 | R19A, R19B, R19C, R19D, R20, R24, R33, R36, R39, R79 | 10 | RES, ZERO OHM 1/4W |
| RC0290 | R206 | 1 | RES, CF 9M1 1/4W 5% |
| RM0002 | R12, R17, R22, R100, R101, R102, R208, R209 | 8 | RES, MF 10K0 1/4W 1% |
| RM0003 | R16, R210 | 2 | RES, MF 15K0 1/4W 1% |
| RM0011 | R1,R4,R103,R105,R201 | 5 | RES, MF 100K 1/4W 1% |
| RM0012 | R14,R30 | 2 | RES, MF 100R 1/4W 1% |
| RM0016 | R104 | 1 | RES, MF 13K0 1/4W 1% |
| RM0020 | R28,R29 | 2 | RES, MF 1K40 1/4W 1% |
| RM0024 | R207 | 1 | RES, MF 2K21 1/4W 1% |
| RM0031 | R204 | 1 | RES, MF 3K32 1/4W 1% |
| RM0035 | R200 | 1 | RES, MF 4K75 1/4W 1% |
| RM0075 | R205 | 1 | RES, MF 475R 1/4W 1% |
| RM0085 | R107 | 1 | RES, MF 2K00 1/4W 1% |
| RM0097 | R35 | 1 | RES, MF 6K19 1/4W 1% |
| RM0106 | R26 | 1 | RES, MF 14K0 1/4W 1% |
| RM0120 | R9,R10 | 2 | RES, MF 30K1 1/4W 1% |
| RM0136 | R202 | 1 | RES, MF 150K 1/4W 1% |
| RM0156 | R108 | 1 | RES, MF 392K 1/4W 1% |
| RM0158 | R27 | 1 | RES, MF 28K0 1/4W 1% |
| RM0171 | R31,R203 | 2 | RES, MF 475K 1/4W 1% |
| RM0188 | R106 | 1 | RES, MF 499R 1/4W 1% |
| RM0191 | R32 | 1 | RES, MF 20K5 1/4W 1% |
| RM0263 | R11 | 1 | RES, MF 48K7 1/4W 1% |
| RM0361 | R76 | 1 | RES, MF 2K10 1/4W 1% |
| RM0402 | R18,R23 | 2 | RES, MF 11K5 1/4W 1% |
| RM0404 | R2 | 1 | RES, MF 54R9 1/4W 1% |
| | MISCELLANEOUS | | |
| 480113 | J1 | 1 | SUB, #18B 6 1/4 STRIP BOTH |
| 480114 | J2 | 1 | SUB, #18R 6 1/4 STRIP BOTH |
| JC0091 | J5, J6 | 2 | CNCTR, RCA SINGLE PC MT |
| JH0006 | J9 | 1 | CNCTR, HEADER 4PIN .100CTR |
| JH0074 | J7, J10 | 2 | CNCTR, HEADER 8PIN LOCKING .1C |
| MT0003 | J17 | 1 | TERM, FASTON MALE PCMT 250X032 |

# IL60 Electrical Parts List (Cont.)

| Part# | Reference Designator | Qty | Description |
|---|---|---|---|
| MT0036 | J16 | 1 | TERM, FASTON MALE PCMT 205X032 |
| SR0007 | S1,S3,S4 | 3 | SWITCH, SPDT TOGGLE C/W CAP PC |
| **PCB, RABOS Board** | | | |
| SEMICONDUCTORS | | | |
| UA0009 | U1 | 1 | OPAMP, QUAD 14P DIL TL074/084 |
| UA0010 | U2 | 1 | OPAMP, DUAL 8PIN DIL TL082 |
| RESISTORS | | | |
| RC0273 | R30,R32,R33 | 3 | RES, ZERO OHM 1/4W |
| RM0001 | R24,R25 | 2 | RES, MF 1K00 1/4W 1% |
| RM0002 | R1,R2,R4,R9,R14,R15,R21,R23 | 8 | RES, MF 10K0 1/4W 1% |
| RM0003 | R8,R13 | 2 | RES, MF 15K0 1/4W 1% |
| RM0012 | R3 | 1 | RES, MF 100R 1/4W 1% |
| RM0013 | R34 | 1 | RES, MF 11K0 1/4W 1% |
| RM0024 | R22 | 1 | RES, MF 2K21 1/4W 1% |
| RM0042 | R26 | 1 | RES, MF 681R 1/4W 1% |
| RM0080 | R5,R10 | 2 | RES, MF 825R 1/4W 1% |
| RM0260 | R36 | 1 | RES, MF 1M0 1/4W 1% |
| RM0271 | R19 | 1 | RES, MF 110K 1/4W 1% |
| RM0281 | R7,R12 | 2 | RES, MF 6K04 1/4W 1 |
| RM0315 | R17 | 1 | RES, MF 2K67 1/4W 1% |
| RM0369 | R6,R11 | 2 | RES, MF 340R 1/4W 1% |
| RM0370 | R18 | 1 | RES, MF 9K31 1/4W 1% |
| RM0377 | R16 | 1 | RES, MF 3K57 1/4W 1% |
| RM0378 | R20 | 1 | RES, MF 549R 1/4W 1% |
| RP0087 | R27,R29 | 2 | POT, A10K DUAL 12MM HOR SEL |
| RP0088 | R28 | 1 | POT, C10K DUAL 12MM HOR SEL |
| DNI | R31, R35 | 2 | Do Not Insert |
| CAPACITORS | | | |
| DNI | C3, C4 | 2 | Do Not Insert |
| CF0045 | C1,C2,C5 | 3 | CAP, F .1UF 63DC 5% 5MMLS |
| MISCELLANEOUS | | | |
| JH0074 | J1 | 1 | CNCTR, HEADER 8PIN LOCKING .1C |
| **PCB, Linear Board** | | | |
| SEMICONDUCTORS | | | |
| DS0001 | D1-11 | 11 | RECT, 100mA 75V SIGNAL 1N4148T |
| QB0017 | Q2, Q6 | 2 | TRANS, NPN 150V 0.6A 2N5551TR |
| QB0018 | Q1, Q5 | 2 | TRANS, PNP 150V 0.6A 2N5401TR |
| QM0015 | Q3, Q7 | 2 | MOSFET, IRF640 T0220AB |
| QM0034 | Q4, Q8 | 2 | MOSFET, IRF9540 T0220AB |
| QM0054 | Q9 | 1 | JFET, N-CH J113 T092 |
| UA0009 | U1 | 1 | OPAMP, QUAD 14P DIL TL074/084 |
| UV0015 | U2 | 1 | VREG, +18v 500MA LM7818CT |
| UV0016 | U3 | 1 | VREG, -18V 500MA LM7918CT |
| DZ0011 | Z1, Z2 | 2 | ZENER, 500MW 3V 5% 1N5225B |
| RESISTORS | | | |
| RM0001 | R12-15, R28-31 | 8 | RES, MF 1K00 1/4W 1% |
| RM0002 | R1, R2, R5, R6 | 4 | RES, MF 10K0 1/4W 1% |
| RM0021 | R7, R8, R23, R24 | 4 | RES, MF 1K82 1/4W 1% |
| RM0024 | R17, R18, R33, R34 | 4 | RES, MF 2K21 1/4W 1% |
| RM0029 | R9, R10, R25, R26 | 4 | RES, MF 3K01 1/4W 1% |
| RM0035 | R41, R42 | 2 | RES, MF 4K75 1/4W 1% |
| RM0039 | R47 | 1 | RES, MF 5K11 1/4W 1% |
| RM0091 | R22, R38 | 2 | RES, MF 3K65 1/4W 1% |
| RM0170 | R21, R37 | 2 | RES, MF 59K 1/4W 1% |
| RM0180 | R16, R32 | 2 | RES, MF 4K99 1/4W 1% |
| RP0059 | R11, R27 | 2 | POT, 2K 8MM TOP ADJ/COVER |

# IL60 Electrical Parts List (Cont.)

| Part# | Reference Designator | Qty | Description |
|---|---|---|---|
| RW0022 | R44, R45 | 2 | RES, WW 0R1 2W 5% |
| RX0055 | R39, R40 | 2 | RES, MO 470R 2W 5% |
| | CAPACITORS | | |
| CC0025 | C15-18 | 4 | CAP, CA 1000PF 100V 10% |
| CC0080 | C13, C14 | 2 | CAP, CA 220P 100V 10% |
| CC0082 | C7, C8 | 2 | CAP, CA .1UF 50V 20% |
| CC0097 | C4, C5 | 2 | CAP, C 10P 50V 10 |
| CE0003 | C6 | 1 | CAP, E 2.2UF 50V 20% 105C |
| CE0013 | C9, C10, C21, C22 | 4 | CAP, E 47UF 50V 20% 5MMLS |
| CE0085 | C19, C20 | 2 | CAP, E 22UF 16V BP 6X11 5MMLS |
| CE0103 | C11-12 | 2 | CAP, E 100UF 35V 85DEG 5MMLS |
| CE0116 | C1 | 1 | CAP, E 2.2UF 50V BP 6X11 5MMLS |
| CF0125 | C3 | 1 | CAP, F .068UF 100V 5% 5MMLS |
| CF0128 | C2 | 1 | CAP, F .033UF 100V 5% 5MMLS |
| | MISCELLANEOUS | | |
| KS0019 | R46 | 1 | THERMISTOR, PTH9L04BD22TS2F510 |
| JH0016 | J7 | 1 | CNCTR, HEADER 2PIN .100CTR |
| JH0074 | J13, J14 | 2 | CNCTR, HEADER 8PIN LOCKING .1C |
| MM0025 | J9, J10 | 2 | MISC, PC MT SCREW TERM 6-32 |
| MT0003 | J1 | 1 | TERM, FASTON MALEPCMT 250X032 |
| MT0023 | J3, J6 | 2 | TERM, FASTON MALEPCMT 187X032 |
| MT0036 | J2 | 1 | TERM, FASTON MALEPCMT 205X032 |
| TS0016 | | 6 | TUBING, #5 BLACK CUT TO .3 |
| 810056 | | 6 | MET, HTSNK CLIP .9X.5X.2 FET Used on Q3, Q4, Q7, Q8, U2 & U3 |
| MS0005 | | 2 | SILPAD, .009 .3C/W TO3P used with regulators U2 & U3 |
| MS0017 | | 4 | MISC, CERAMIC PLATE TO-220 Oxide used with FETs |
| **PCB, Power Supply 500W 230V/120V** | | | |
| | SEMICONDUCTORS | | |
| DR0077 | D506, D507 | 2 | RECT, 1A 100V FAST REC 1N4934 |
| DS0001 | D509, D510, D511 | 3 | RECT, 100mA 75V SIGNAL 1N4148T |
| DS0002 | D501, D502, D505 | 3 | RECT, 100MA 200V SIGNAL 1N3070 |
| DD0003 | D503 | 1 | RECT, 1A2 60V DIAC |
| DR0076 | D504 | 1 | RECT, 16A 400V ULTRA MUR1640CT |
| DR0087 | D508 | 1 | RECT, 15A 200V ULTRA MUR1540 |
| QB0002 | Q505 | 1 | TRANS, NPN 40V .6A TO92 2N4401 |
| QB0014 | Q503 | 1 | TRANS, PNP TO92 MPSA92TR |
| QB0017 | Q506 | 1 | TRANS, NPN 150V 0.6A 2N5551 |
| QM0015 | Q504, Q507 | 2 | MOSFET, IRF640 TO220AB |
| QM0055 | Q501, Q502 | 2 | MOSFET, IRF740 TO220AB |
| HC1011 | U501 | 1 | HYBRID, THK FILM HC BUCK CNTR |
| DZ0002 | Z501, Z503 | 2 | ZENER, 500mW 12V 5% 1N5242B |
| DZ0004 | Z505 | 1 | ZENER, 500mW 18V 5% 1N5248B |
| DZ0021 | Z502, Z504 | 2 | ZENER, 500MW 15V 5% 1N5245B |
| DZ0038 | Z506 | 1 | ZENER, 500MW 33V 5% 1N5257B |
| | RESISTORS | | |
| RC0082 | R509 | 1 | RES, CF 100K 1/2W 5% |
| RC0136 | R515 | 1 | RES, CF 160K 1/4W 5% |
| RC0273 | R518, R519 | 2 | RES, ZERO OHM 1/4W |
| RM0001 | R507 | 1 | RES, MF 1K00 1/4W 1% |
| RM0002 | R525 | 1 | RES, MF 10K0 1/4W 1% |
| RM0050 | R531 | 1 | RES, MF 90K9 1/4W 1% |
| RM0070 | R528 | 1 | RES, MF 301R 1/4W 1% |
| RM0191 | R529 | 1 | RES, MF 20K5 1/4W 1% |
| RM0198 | R508 | 1 | RES, MF 205K 1/4W 1% |
| RM0260 | R526 | 1 | RES, MF 1M0 1/4W 1% |
| RM0337 | R530 | 1 | RES, MF 19K6 1/4W 1% |
| RM0339 | R511, R512, R523, R534, R535 | 5 | RES, MF 10R 0.6W 1% FLAMEPROOF |

# IL60 Electrical Parts List (Cont.)

| Part# | Reference Designator | Qty | Description |
|---|---|---|---|
| RM0340 | R503, R506 | 2 | RES, MF 22R 1/4W 1% FLAMEPROOF |
| RM0397 | R502, R505 | 2 | RES, MF 422R 1/4W 1% |
| RM0399 | R527 | 1 | RES, MF 3K48 1/4W 1% |
| RW0022 | R521, R522, R532, R533 | 4 | RES, WW 0R1 2W 5% |
| RX0046 | R514 | 1 | RES, MO 47K 1W 5% |
| RX0048 | R501, R504 | 2 | RES, MO 330R 1W 5% |
| RX0072 | R524 | 1 | RES, MO 100R 1W 5 |
| RX0106 | R538 | 1 | RES, MO 15K 2W 5% |
| | CAPACITORS | | |
| CE0013 | C505, C506 | 2 | CAP, E 47UF 50V 20% |
| CE0098 | C507 | 1 | CAP, E 22UF 50V 20% 5X11 .2LS |
| CF0019 | C501, C502 | 2 | CAP, F 4700PF 100V 5% 5MMLS |
| CC0040 | C503 | 1 | CAP, CA 4700PF 100V 10% |
| CC0059 | C518, C519 | 2 | CAP, CA .1UF 100V 20% |
| CC0082 | C521 | 1 | CAP, CA .1UF 50V 20% |
| CC0021 | C516 | 1 | CAP, C 470PF 1KV 10% |
| CC0130 | C524 | 1 | CAP, CY1 4700PF 250V 20% 10MML |
| CE0040 | C504 | 1 | CAP, E 680UF 200V 30X35 85DEG |
| CE0136 | C508, C509 | 2 | CAP, E 820UF 200V 20% 30X35 |
| CF0050 | C510, C511, C512, C513, C520 | 5 | CAP, F .1UF 250V 10% |
| CF0146 | C517 | 1 | CAP, F 6.8UF 250V 10% 27MMLS |
| | MISCELLANEOUS | | |
| KS0021 | R513 | 1 | SURGISTOR, 4R 8A 70J SL154R008 |
| BF0007 | L502 | 1 | BEAD, FERRITE |
| 500111 | T501 | 1 | XFMR, ETD44 |
| 540131 | L501 | 1 | IND, 25UH UPRIGHT AIR COIL |
| TS0016 | HtSkTube | 6 | TUBING, #5 BLACK CUT TO .3 Used on D504, D508, Q501, Q502, Q504 & Q507 |
| HS0054 | | 4 | SCREW, #4 SELF TAP 1/2 PAN PHI USED ON H4, H5, H6, H7 |
| HS0089 | | 4 | SCREW, #4-40X1/2 PAN PHIL ZNP USED ON HEATSINK |
| HW0030 | | 4 | WASHER, FLAT #8 NYLON USED WITH HS0089 ON HEATSINK |
| JH0074 | J505 | 1 | CNCTR, HEADER 8PIN LOCKING .1C |
| MT0023 | J501, J502, J503, J504 | 4 | TERM, FASTON MALE PCMT 187X032 |
| 810066 | Clip | 6 | MET, HTSNK CLIP HPS SERIES Used on Q501, Q502, Q504, Q507, D504 & D508 |
| 810105 | Heatsink | 1 | Lance and Form Heatsink Primary |
| 810106 | Heatsink | 1 | Lance and Form Heatsink Secondary There should be a piece of tape in between the heatsink and the PCB. |
| MS0017 | Ceramic | 2 | MISC, CERAMIC PLATE TO-220 USED ON Q504, Q507 |
| Q508 | | 1 | Do not insert |
| R516, R517, R539, R540, R541, R542, R543, R544 | | 8 | Do not insert |
| U502 | | 1 | Do not insert |
| Z507, Z508 | | 2 | Do not insert |
| **PCB, EMI Filter board** | | | |
| | SEMICONDUCTORS | | |
| DB0009 | D5 | 1 | RECT, 6A 400V BRIDGE |
| | RESISTORS | | |
| RC0004 | R23 | 1 | RES, CF 1M0 1/4W 5% |
| | CAPACITORS | | |
| CC0130 | C3 | 1 | CAP, CY1 4700PF 250V 20% 10MML |
| CF0050 | C4, C5 | 2 | CAP, F .1UF 250V 10% 10MMLS |
| CF0057 | C2 | 1 | CAP, FX .22UF 250V 10% |

# IL60 Electrical Parts List (Cont.)

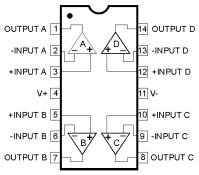
| Part# | Reference Designator | Qty | Description |
|---|---|---|---|
| | MISCELLANEOUS | | |
| KV0001 | Z4 | 1 | VARISTOR, 275V 100J .6W |
| MT0023 | J5, J6 | 1 | TERM, FASTON MALE PCMT 187X032 |
| 480097 | J1 | 1 | SUB, #18B 9 187X032/1/4STRP |
| 480090 | J2 | 1 | SUB, #18R 9 187X032/1/4STRP |
| 540124 | L1 | 1 | IND, CM CHOKE YT7271 |
| 810088 | | 1 | MET, Heatsink 1x2 Bridge |
| HN0006 | | 1 | NUT, HEX KEP #6-32 ZNP Used with screw HS0066 |
| HS0066 | | 1 | SCREW, #6-32X1/2 PAN PHIL BLK Used on the bridge and heatsink |
| **PCB, VOLUME-LED INTERLUDE LEFT** | | | |
| DL0014 | D1,D2 | 2 | LED, 3MM BICOLOR RED/GR |
| RP0099 | R1 | 1 | POT, C10K SINGLE/BRKT D SHAFT |
| JH0006 | J1 | 1 | CNCTR, HEADER 4PIN .100CTR |
| HS0078 | | 3 | SCREW, #4-24X1/2 HL PP BLK USED ON 610043 |
| HW0038 | | 1 | WASHER, FLAT .195ID .437OD RB AT PLASTIC HOUSING FOR CABLE. |
| | | 1 | INTERLUDE VOL-LED MTG PLT LEFT |
| JC0169A | | 1 | CNCTR, FEM-MA HARNESS 4PSH 15 USED ON LOCATION J1 |
| MM0065 | | 1 | MISC, VOL GASKET L INTERLUDE |
| RP0104 | | 1 | POT, KNOB INTERLUDE LEVEL L |
| **PCB, VOLUME-LED RIGHT** | | | |
| DL0014 | D1,D2 | 2 | LED, 3MM BICOLOR RED/GR |
| RP0097 | R1 | 1 | POT, A10K SINGLE/BRKT D SHAFT |
| JH0006 | J1 | 1 | CNCTR, HEADER 4PIN .100CTR |
| HS0078 | | 3 | SCREW, #4-24X1/2 HL PP BLK USED ON 610044 |
| HW0038 | | 1 | WASHER, FLAT .195ID .437OD RB AT PLASTIC HOUSING FOR CABLE. |
| INTERLUDE CUP R | | 1 | INTERLUDE VOL-LED MTG PLT RIGH |
| JC0169A | | 1 | CNCTR, FEM-MA HARNESS 4PSH 15 USED ON LOCATION J1 |
| MM0066 | | 1 | MISC, VOL GASKET R INTERLUDE |
| RP0103 | | 1 | POT, KNOB INTERLUDE LEVEL R |
| | **MISCELLANEOUS** | | |
| 480033 | | 3 | SUB, #18R 4 187X032/187X032 1 PCS FOR IEC L TO FUSE; 1 PCS FOR FUSE TO SWITCH; 1 PCS FOR SWITCH TO EMI |
| 480048 | | 1 | SUB, #18B 9 187X032/187X032 Power Supply CD- TO LINEAR CD- |
| 480073 | | 1 | SUB, #18R 9 187X032/187X032 Power Supply CD+ TO LINEAR CD+ |
| 480083 | | 2 | SUB, #18B 4 187X032/187X032 1 for IEC TO SWITCH; 1 FOR SWITCH TO EMI |
| 480091 | | 1 | SUB, #18R 7 187X032/187X032 DC+ TO POWER SUPPLY |
| 480119 | | 1 | SUB, #16B 20 205X032/205X032 XOVER - WIRE; |
| 480120 | | 1 | SUB, #16R 20 250X032/250X032 XOVER + WIRE; |
| 480121 | | 1 | SUB, #16B 30 205X032/205X032 SPEAKER - WIRE; |
| 480122 | | 1 | SUB, #16R 30 250X032/250X032 SPEAKER + WIRE; |
| 480130 | | 1 | SUB, #18B 7 187X032/187X032 DC- TO POWER SUPPLY |
| 810066 | | 6 | MET, HTSNK CLIP HPS SERIES USED ON D4, D8, Q1, Q2, Q4 & Q7 |
| 810088 | | 1 | MET, HTSNK 1X2 BRIDGE REV 2; USED WITH THE BRIDGE |
| 810105 | | 1 | MET, HTSNK PRI 3FET IL120 |
| 810106 | | 1 | MET, HTSNK SEC 3FET IL120 |
| 810107 | | 1 | IL60/120 SHIELD |
| 810108 | | 1 | IL60/120 POWER BRACKET |

# IL60 Electrical Parts List (Cont.)

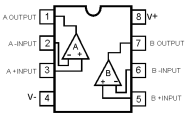
| Part# | Reference Designator | Qty | Description |
|---|---|---|---|
| 930054 | | 1 | CUP, PCBA BUCKET C/W GASKET FEATURE BOARD BOX |
| 930055 | | 1 | CUP, AMP BUCKET AC IN W/GASKET AC BOX |
| FH0012 | | 1 | FUSE, HOLDER PANEL MT SEALED |
| FS0026 | | 1 | FUSE, 4A 250V 1.25X.25 GLASS |
| HN0006 | | 1 | NUT, HEX KEP #6-32 ZNP USED WITH THE BRIDGE |
| HN0015 | | 4 | NUT, HEX KEP #8-32 ZNP USED WITH HS0057 |
| HS0004 | | 4 | SCREW, #6-32X1/4 PAN PHIL ZNP 1PER USED ON MZ0040; 1PER USED ON standoff P/N MZ0045; 2PER USED ON MM0025 for Linear board |
| HS0041 | | 7 | SCREW, #4-3/8 TYPE A PP BLK 2 USED ON EMI BOARD; 5 USED ON POWER SUPPLY BOARD |
| HS0057 | | 4 | SCREW, #8-32X1/2 PAN PHIL BLK MOUNT BRACKET TO PANEL |
| HS0060 | | 3 | SCREW, #6-32X3/8 PAN PHIL BLK MOUNT SHIELD TO BRACKET |
| HS0062 | | 6 | SCREW, #6-1/2 TYPE B PP BLK USED ON FETS |
| HS0065 | | 3 | SCREW, #6-32X1/4 PAN PHIL BLK 1 USED ON MZ0025 for Feature Board, 1 used on MZ0040, 1 used on standoff P/N NEW |
| HS0066 | | 1 | SCREW, #6-32X1/2 PAN PHIL BLK USED WITH THE BRIDGE |
| HS0067 | | 26 | SCREW, #6-3/8 TYPE A PP BLK 8 USED WITH 930054; 6 USED WITH 930055; 6pcs used on MZ0030; 3pcs used on MZ0040; 3 pcs used on MM0025 |
| HS0078 | | 6 | SCREW, #4-24X1/2 HL PP BLK 2PER USED ON BINDING POSTS; 2PER USED ON RCA'S; 2PER USED ON RABOS STANDOFF |
| HS0089 | | 4 | SCREW, #4-40X1/2 PAN PHIL ZNP TO CONNCT THE HEATSINKS |
| IL60 PANEL | | 1 | INTERLUDE IL60 PANEL COMPLETE |
| JC0071 | | 1 | CNCTR, FEM-FEM HARNESS 8PIN 9 USED ON THE RABOS BOARD TO FEATURE BOARD |
| JC0104 | | 1 | CNCTR, 2PIN BP GOLD C/W TERM |
| JC0129 | | 1 | CNCTR, AC IEC SOCKET .250 2PIN |
| JC0163A | | 1 | CNCTR, FEM-MAL HARNESS 8P 10 J7 ON THE FEATURE TO J13 ON LINEAR BOARD |
| JC0163B | | 1 | CNCTR, FEM-FEM HARNESS 8P 10 J7 ON THE FEATURE TO J13 ON LINEAR BOARD |
| JC0165 | | 1 | CNCTR, FEM-FEM HARNESS 8P 12 Power supply to Linear |
| JC0169C | | 1 | CNCTR, FEM-FEM HARNESS 4PS 28 USED ON J9; |
| MM0069 | | 3 | MISC, RUBBER GROMMET IL50/100 |
| MM0076 | | 2 | MISC, PANEL GASKET, IL60/IL120 |
| MS0005 | | 7 | SILPAD, .009 .3C/W TO3P 3PER USED ON MAIN BOARD; 4PER USED ON THE LINEAR BOARD; |
| MZ0003 | | 1 | STANDOFF, 6-32 3/8 ROUND AL USED ON AC FILTER PCB |
| MZ0030 | | 2 | STANDOFF, 3/8 NYLON 2 PER USED ON AC FILTER BOARD |
| MZ0040 | | 2 | STANDOFF, 30MM NYLON USED ON THE RABOS BOARD |
| MZ0045 | | 1 | STANDOFF, 6-32X 1-3/16 HEX AL USED WITH THE RABOS BOARD |
| SR0032 | | 1 | SWITCH, ROCKER TV5 ON THE FRONT PANEL |

# Integrated Circuit Diagrams

OPAMP, QUAD 14P DIL LM324N,TL074/084
U1,2,5,6

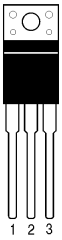



OPAMP, DUAL 8PIN DIL TL082
U2,7



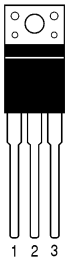

-18V LM7918CT
REGULATOR
U3

1. GROUND
2. INPUT
3. OUTPUT




+18V LM7818CT
REGULATOR
U2

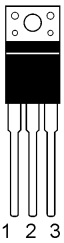
1. INPUT
2. GROUND
3. OUTPUT




JFET, J111, J113, Q5,9

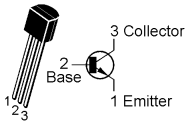
1. D
2. S
3. G

MOSFET, IRF640/740/9540,
Q3,4,7,8,501,502,504,507

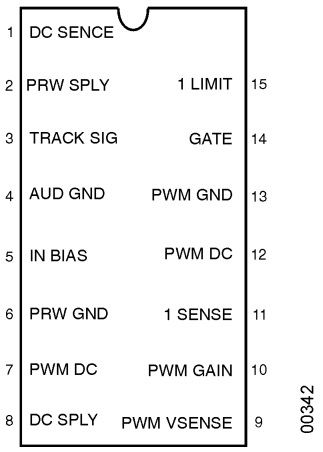



1. G
2. D
3. S

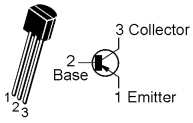
TRANS, NPN 150V 0.6A 2N5551, 2N4401,
Q2,6,505,506



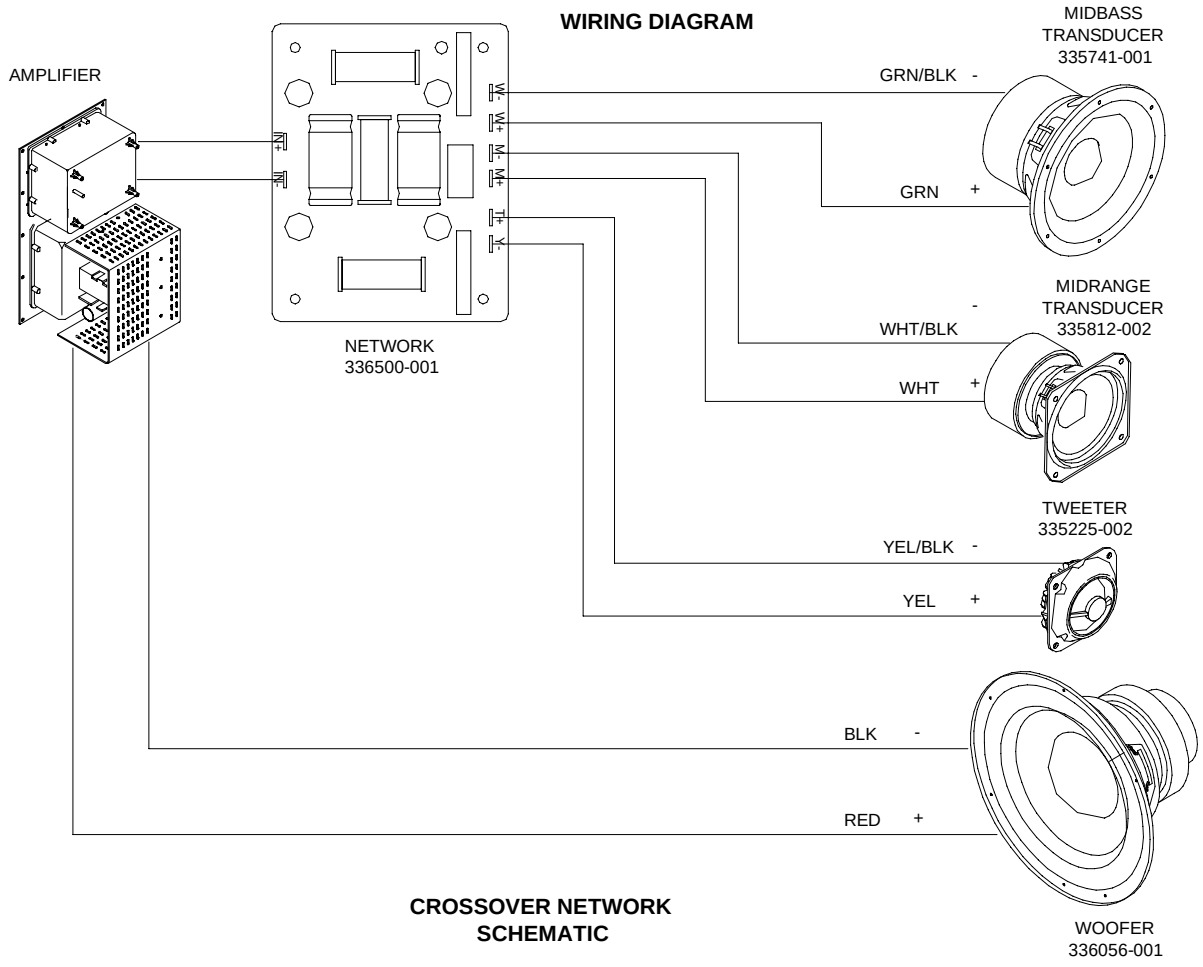

BASH CONTROLLER, U501



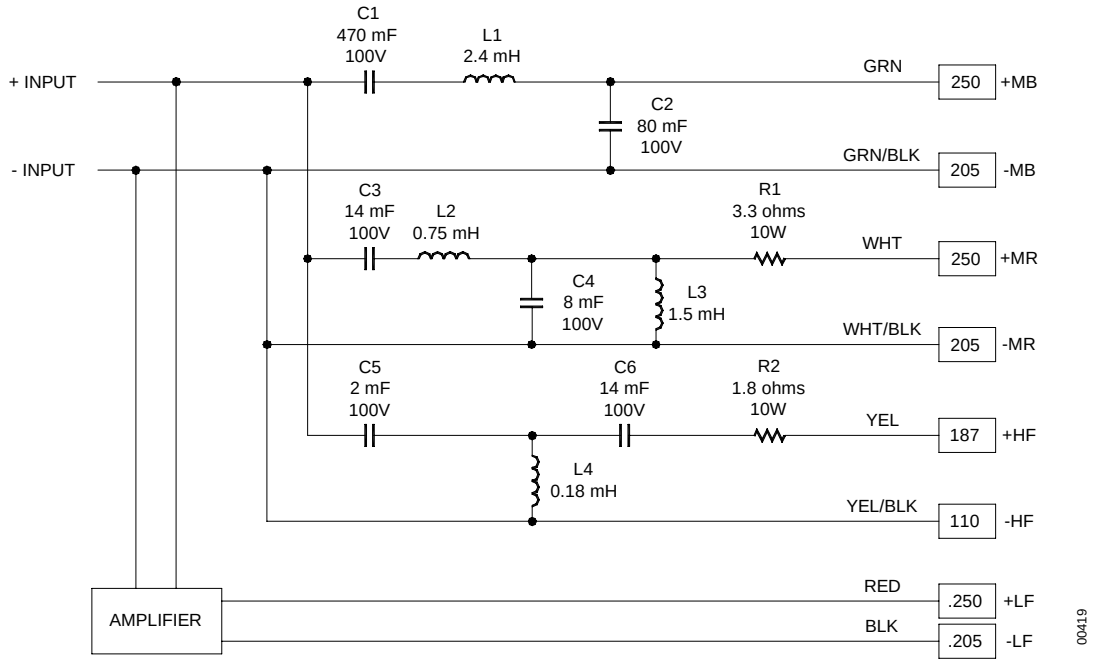

TRANS, PNP 150V 0.6A 2N5401,MPSA92TR
Q1,5,503



# Wiring Diagram/Crossover Network




**CROSSOVER NETWORK SCHEMATIC**



IL60

Infinity

| REVISION RECORD | | | |
|---|---|---|---|
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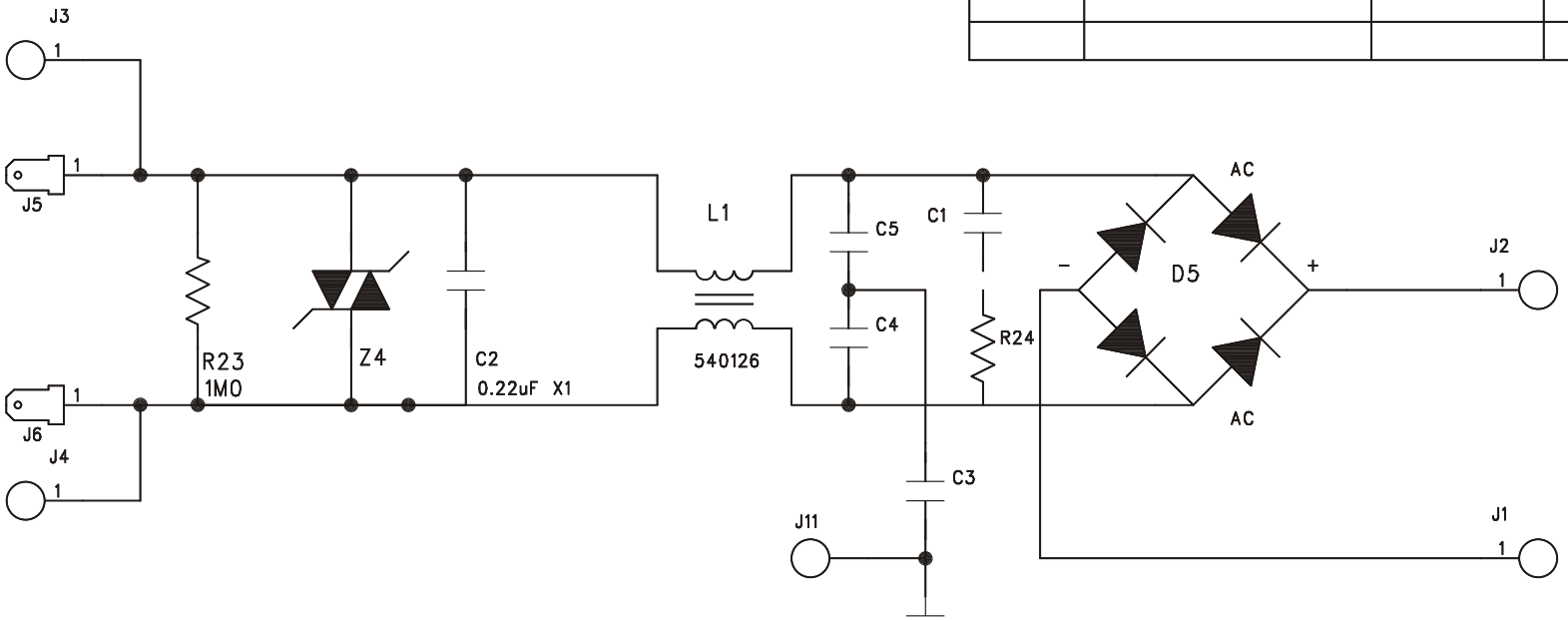
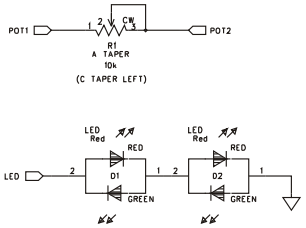
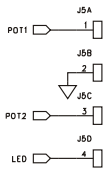
| | see sheet 2 | | |
| | | | |
| | | | |
| | | | |






500W EMI/Volume PCB's

# IL60

Infinity

| REVISION RECORD | | | |
|---|---|---|---|
| LTR | ECO NO: | APPROVED: | DATE: |
| A | First trial | | Nov 22 99 |
| B | Add R356,R357 | | Dec 8 99 |
| C | ADD THERMAL SHUTDOWN | | Feb 29 2000 |
| D | Add R513,R518...R520 | | Jun 1 2000 |

See sheet 2 for changes

SUPPLY CONTROL TO LINEAR AMP

BASH SUPPLY

| | | |
|---|---|---|
| DRAWN: PATRICK LEE | DATED: NOV 12 99 | |
| CHECKED: | DATED: | |
| QUALITY CONTROL: | DATED: | |
| RELEASED: | DATED: | |

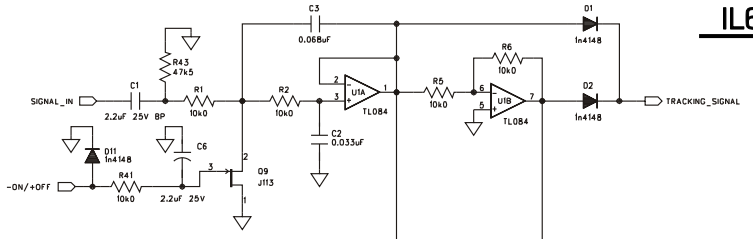
TITLE: INTERLUDE IL60 HC BASH 500W POWER SUPPLY 120V/230V SELECTABLE

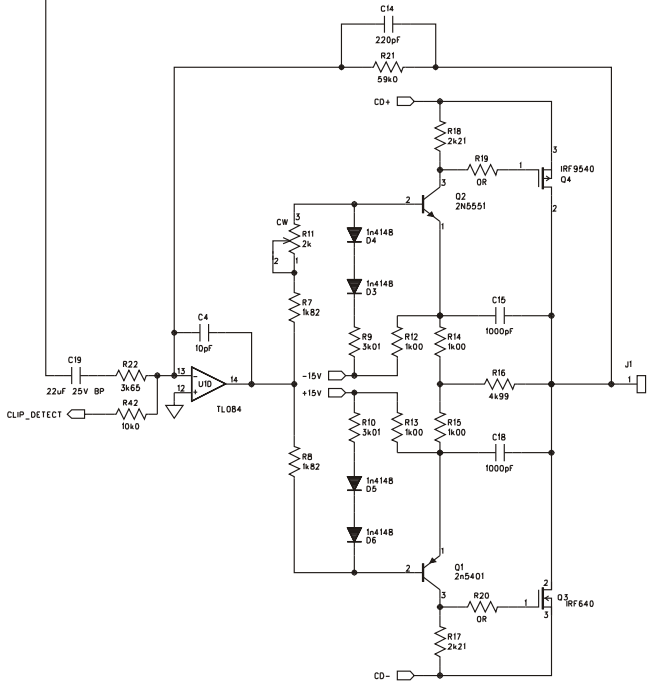
SCALE: | SHEET: 1 OF 2

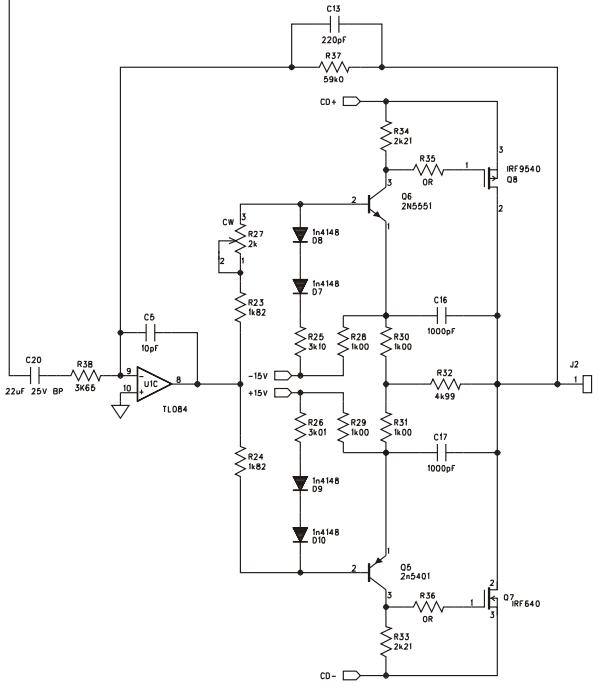
# IL60

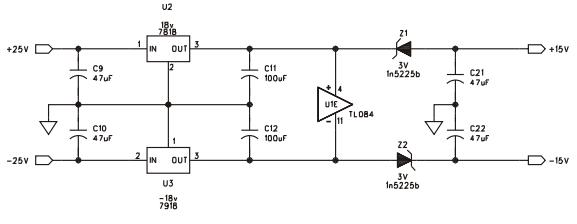
Infinity

| REVISION RECORD | | | |
|---|---|---|---|
| LTR | ECO NO: | APPROVED: | DATE: |
| 2 | Title changed | | 03AUG00 |
| | see sheet 2 | | |
| | | | |
| | | | |

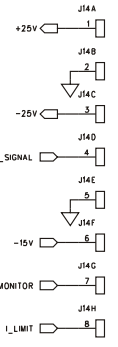


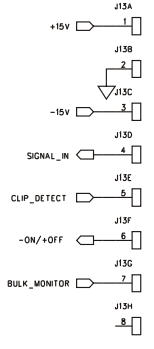



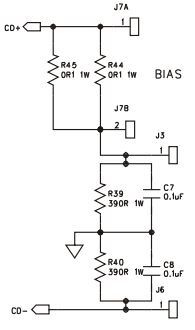

CLASS D

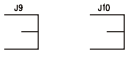



FEATURE




POWER SUPPLY




| | |
|---|---|
| DRAWN: Doug Hansen | DATED: Oct.13.99 |
| CHECKED: | DATED: |
| QUALITY CONTROL: | DATED: |
| RELEASED: | DATED: |

TITLE: Interlude IL60 Linear Board

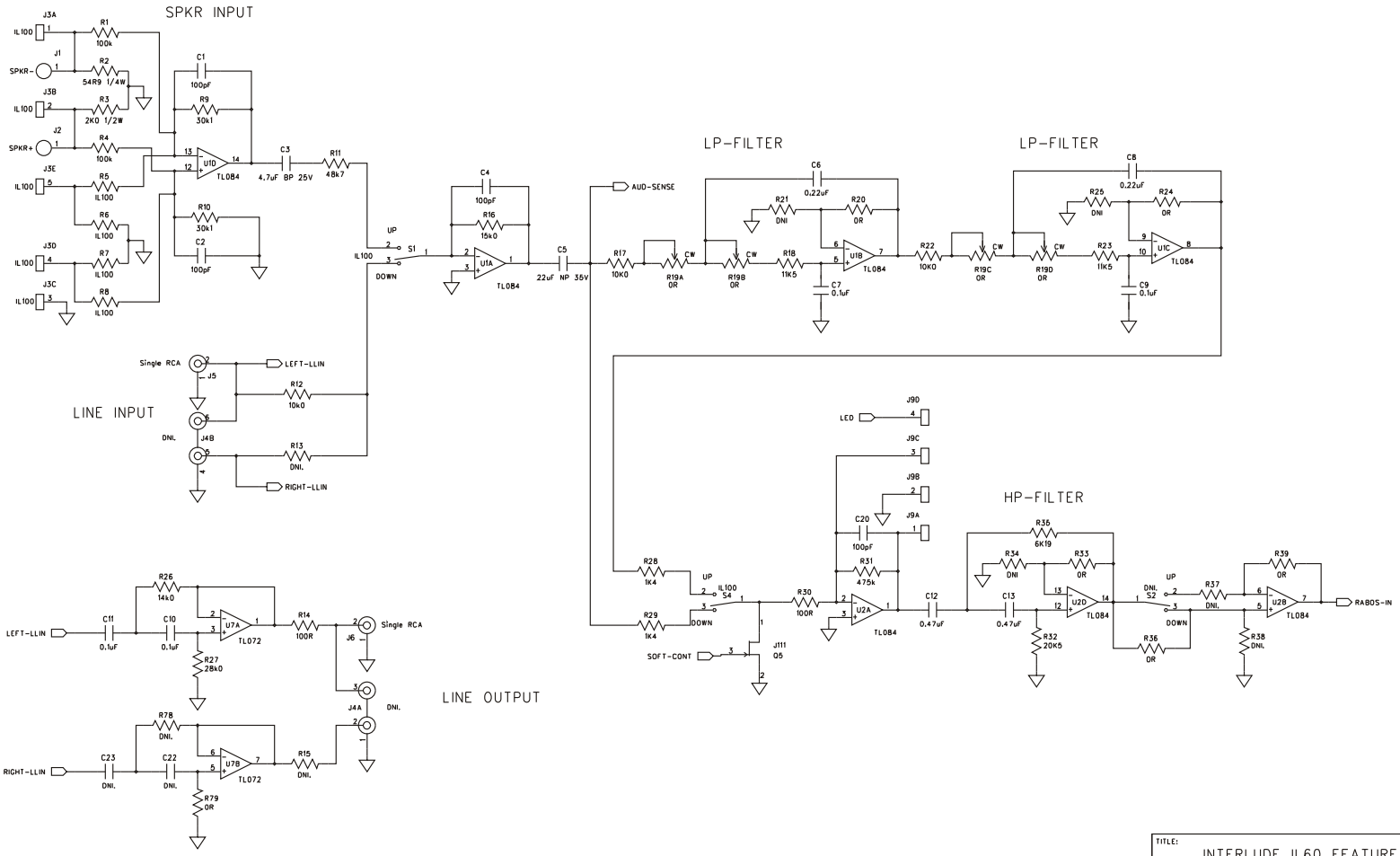
SCALE:

SHEET: 1 OF 2

# IL60

Infinity

| REVISION RECORD | | | |
|---|---|---|---|
| LTR | ECO NO: | APPROVED: | DATE: |
| 1 | | | 18JUL00 |
| 2 | R200 CHANGED TO 4K75 | | 31JUL00 |
| 3 | R2 CHANGED TO 54R9 1/4W | | |
| | R3 CHANGED TO 2K0 1/2W | | 21AUG00 |




| | |
|---|---|
| DRAWN: Doug Hansen | DATED: Dec.06.99 |
| CHECKED: | DATED: |
| QUALITY CONTROL: | DATED: |
| RELEASED: | DATED: |

TITLE: INTERLUDE IL60 FEATURE MAIN BOARD

SCALE:

SHEET 1 OF 2

# IL60

Infinity

| REVISION RECORD | | | |
|---|---|---|---|
| LTR | ECO NO: | APPROVED: | DATE: |
| | | | |
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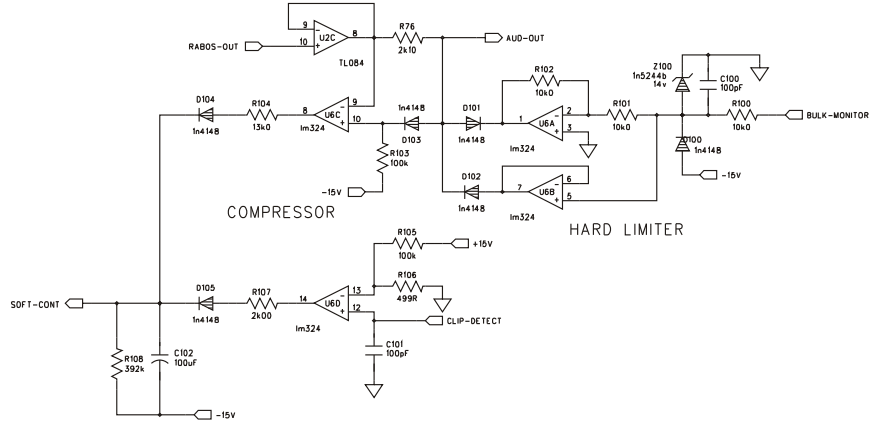
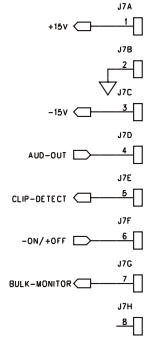
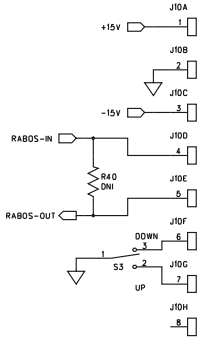
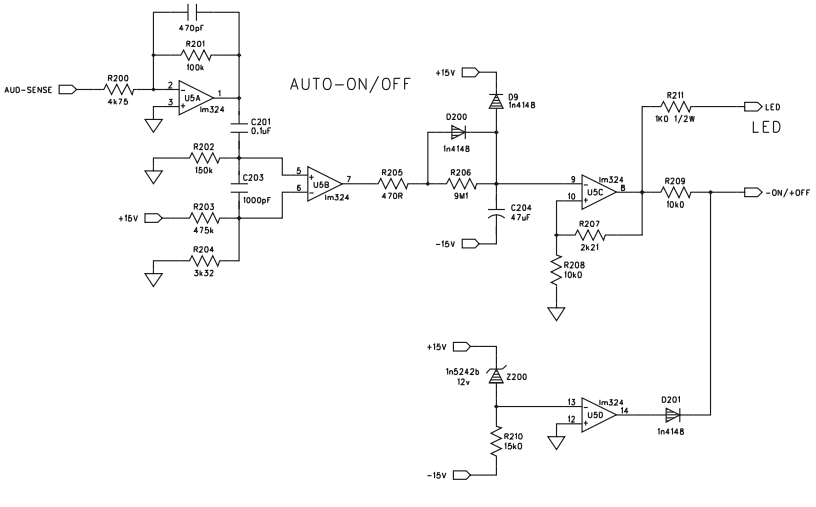


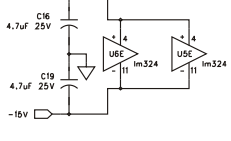

TO AMPLIFIER




TO RABOS



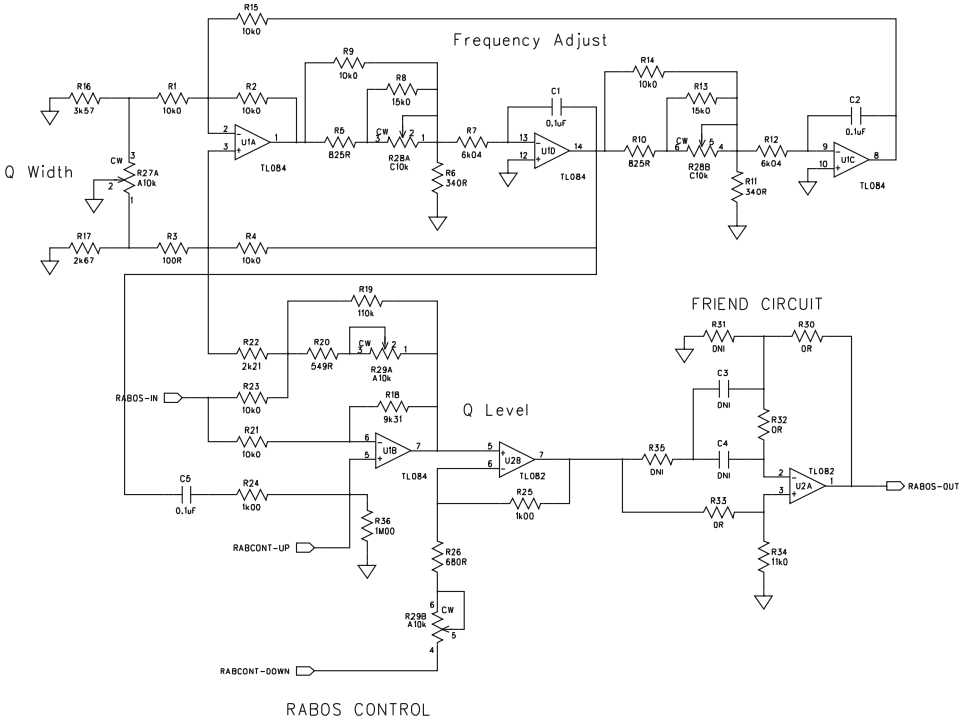



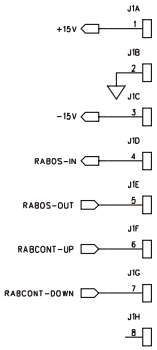




| | | |
|---|---|---|
| DRAWN: Doug Hansen | DATED: Dec.06.99 | TITLE: INTERLUDE IL60 FEATURE HOUSEKEEPING |
| CHECKED: | DATED: | |
| QUALITY CONTROL: | DATED: | |
| RELEASED: | DATED: | SCALE: / SHEET 2 OF 2 |

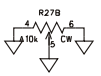
Infinity

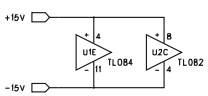
| REVISION RECORD | | | |
|---|---|---|---|
| LTR | ECO NO: | APPROVED: | DATE: |
| 1 | | | 18JUL00 |
| | | | |
| | | | |
| | | | |




UNUSED




| | |
|---|---|
| DRAWN: Doug Hansen | DATED: Dec.06.99 |
| CHECKED: | DATED: |
| QUALITY CONTROL: | DATED: |
| RELEASED: | DATED: |

TITLE: Interlude IL60 Feature Rabos Board

SCALE:

SHEET: 1 OF 1

| Rev. | Date | ECR No. | APPROVED | DESCRIPTION | Rev. |
|---|---|---|---|---|---|
| E | Jul 4 2000 | | | Propose H10 for AUDIOGROUND | |
| F | Jul 28 2000 | | | R527 Changed to 3K48 | |
| G | Aug 29 2000 | | | 1. PCB CHANGED FROM REV E TO REV D TO CORRECT ERROR. | |
| | | | | 2. C504 CHANGED FROM 560UF TO 680UF | |
| | | | | 3.C505 CHANGED FROM 22UF CONNECTING D505 TO 47UF CONNECTING D506 | |
| | | | | 4. C506 CHANGED LOCATION FROM CONNECTING D506 TO CONNECTING D507 | |
| | | | | 5. C507 CHANGED FROM 47UF CONNECTING D507 TO 22UF CONNECTING D505 | |
| | | | | 6. REF. DESIGNATOR OF C514 CHANGED TO C524 | |
| | | | | 7. ADD D501 IN4936, WHICH IS NOT USED IN REV E | |
| | | | | 8. Q503 CHANGED FROM 2N5401 TO MPSA92 | |
| | | | | 9. R516 & R517 CHANGED TO OPT | |
| | | | | 10. PIN 10 & 11 CHANGED FROM "CONNECTING D506 & R512" TO "CONNECTING | |
| | | | | D505 & R511" | |
| | | | | 11. PIN 16 & 17 CHANGED FROM "CONNECTING D505 & R511" TO "CONNECTING | |
| | | | | D506 & R512" | |
| 0 | Sep 12 2000 | | Q. KHALIFA | 1. The Revision of PCB P/N 640022 changed to Rev 0. | |
| | | | | 2. D501 & D502 CHANGED FROM 1N4936 TO 1N3070. | |
| | | | | 3. R508 changed from "CONNECTING T501 PIN7" TO "CONNECTING PRI-". | |
| | | | | 4. R529 CHANGED FROM 3K65 TO 20K5. | |
| | | | | 5. R530 CHANGED FROM 5K11 TO 19K6. | |
| | | | | 6. R531 CHANGED FROM 31K6 TO 90K9. | |
| | | | | | |
| | | | | **R22 changed from 10K0 to 3K65** | |
| | | | | **R38 changed from 10K0 to 3K65** | |
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